H3C XE 200/2000 IP PBX

Command Manual

Hangzhou H3C Technologies Co., Ltd.

http://www.h3c.com

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About This Manual

Related Documentation

In addition to this manual, each H3C XE 200/2000 IP PBX documentation set includes the following:

Manual	Description
H3C XE 200/2000 IP PBX Installation Manual	It provides information for the hardware features, installation, configuration, maintenance and troubleshooting involved in the XE series.
H3C XE 200/2000 IP PBX Operation Manual	It presents the functional features, operating fundamentals and configuration guide involved in the XE 200/2000.
H3C XE 200/2000 IP PBX G-Remote User Manual	It introduces the graphic user interface and the operation through the XE 200/2000.

Organization

H3C XE 200/2000 IP PBX Command Manual is organized as follows:

Chapter	Contents
1 Basic Configuration	Describes the commands involved in basic configuration, interface configuration and static route configuration.
2 Process Server Configuration	Describes the commands involved in the configuration on H.323 GateKeeper and SIP Server.
3 Location Server Configuration	Describes the commands involved in Location Server configuration.
4 Feature	Describes the commands involved in the unique functions and features that the IP PBX provides.
5 System Management	Describes the commands involved in terminal service and user interface configuration, system maintenance and management, file management, user management, as well as SNMP configuration.

Chapter	Contents
6 IP Performance and Application	Describes the commands involved in the configuration on static routes, RIP, OSPF, BGP, MBGP, IGMP, PIM, MSDP and routing policies.
7 Media Server	Describes the commands involved in IP PBX Media Server configuration.
8 Call Services	Describes the commands involved in the configuration on call services.
9 Appendix	Lists the indexes of the commands involved in this manual.

Conventions

The manual uses the following conventions:

I. Command conventions

Convention	Description
Boldface	The keywords of a command line are in **Boldface**.
italic	Command arguments are in *italic*.
[ ]	Items (keywords or arguments) in square brackets [ ] are optional.
{ x | y | ... }	Alternative items are grouped in braces and separated by vertical bars. One is selected.
[x | y | ...]	Optional alternative items are grouped in square brackets and separated by vertical bars. One or none is selected.
{ x | y | ... } *	Alternative items are grouped in braces and separated by vertical bars. A minimum of one or a maximum of all can be selected.
[x | y | ...] *	Optional alternative items are grouped in square brackets and separated by vertical bars. Many or none can be selected.
&<1-n>	The argument(s) before the ampersand (&) sign can be entered 1 to n times.
#	A line starting with the # sign is comments.

II. GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in Boldface. For example, the **New User** window appears; click **OK**.
>	Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**.

Convention	Description
< >	Button names are inside angle brackets. For example, click <OK>.
[ ]	Window names, menu items, data table and field names are inside square brackets. For example, pop up the [New User] window.
/	Multi-level menus are separated by forward slashes. For example, [File/Create/Folder].

III. Symbols

Convention	Description
 Warning	Means reader be extremely careful. Improper operation may cause bodily injury.
 Caution	Means reader be careful. Improper operation may cause data loss or damage to equipment.
🕮 Note	Means a complementary description.

Basic Configuration

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Chapter 1 Basic Configuration Commands

1.1.1 clock datetime

Syntax

clock datetime *HH:MM:SS YYYY/MM/DD*

View

User view

Parameter

HH:MM:SS: Current time in HH:MM:SS format, HH is in the range 0 to 23, MM and SS in the range 0 to 59.

YYYY/MM/DD: Current date in YYYY/MM/DD format, where YYYY is the current year (2000 to 2099); MM is the current month (1 to 12); DD is the current day (1 to 31).

Description

Use the **clock datetime** command to set current date and time for a H3C XE 200/2000 IP PBX (hereinafter referred to as XE IP PBX).

You must set the current date and time when the absolute time is required.

The parameter SS is not necessary for time setting.

Related command: **display clock**.

Example

Set the current date/time of an XE IP PBX to January 1st, 2004, 00:00:00.

```
<XE> clock datetime 0:0:0 2004/01/01
```

1.1.2 clock summer-time

Syntax

clock summer-time *summer-time-zone-name* { **one-off** | **repeating** } *start-time start-date end-time end-date add-time*

undo clock summer-time

View

User view

Parameter

summer-time-zone-name: Name of the time zone to be displayed when the daylight saving time is in effect, from 1 to 32 characters in length.

one-off: Only sets the time of daylight saving time for a particular year.

repeating: Sets the time of daylight saving time for every year from a particular year.

start-time start-date: The start time and date of the daylight saving time, with time in *HH:MM:SS* format and date in *YYYY/MM/DD* format.

end-time end-date: The end time and date of the daylight saving time, with time in *HH:MM:SS* format and date in *YYYY/MM/DD* format.

add-time: The daylight saving time offset.

Description

Use the **clock summer-time** command to set the name of daylight saving time and the beginning and end dates.

Use the **undo clock summer-time** command to remove the current configuration.

After the setting takes effect, you can use the **display clock** command to view the information. The system uses the local time with daylight saving time and time zone adjustment to display the log and debug information.

Related command: **clock timezone**.

Example

Specify that the daylight saving time “z2” starts from 06:00:00 on June 8, 2002 to 06:00:00 on September 1, 2002, and set the system clock ahead one hour.

```
<XE> clock summer-time z2 one-off 06:00:00 2002/06/08 06:00:00 2002/09/01
01:00:00
```

Specify that the daylight saving time “z2” starts from 06:00:00 on June 8 to 06:00:00 on September 1, starting from the year 2002, and set the system clock ahead one hour.

```
<XE> clock summer-time z2 repeating 06:00:00 2002/06/08 06:00:00 2002/09/01
01:00:00
```

1.1.3 clock timezone

Syntax

clock timezone *time-zone-name* { **add** | **minus** } *HH:MM:SS*

undo clock timezone

View

User view

Parameter

time-zone-name: Name of the time zone, from 1 to 32 characters in length.

add: Positive offset to universal time coordinated (UTC, equivalent to mean solar time at the prime meridian (0° longitude)) time.

minus: Negative offset to UTC time.

HH:MM:SS: Time in hours, minutes, and seconds.

Description

Use the **clock timezone** command to set the local time zone.

Use the **undo clock timezone** command to restore the default UTC time zone.

After the setting takes effect, you can use the **display clock** command to view the information. Times in log and debug information are the local time with daylight saving time and time zone adjustment.

Related command: **clock summer-time**.

Example

Set the name of the local time zone to Z5, 5 hours ahead of UTC time.

```
<XE> clock timezone z5 add 05:00:00
```

1.1.4 command-alias

Syntax

command-alias *alias currentfirstcmdkey*

undo command-alias *alias*

View

System view

Parameter

alias: An alias within 64 characters set by the user. It cannot be identical with the existing first keywords.

currentfirstcmdkey: The complete name of a current first keyword to be substituted by the alias.

Description

Use the **command-alias** command to configure an alias for the specified command.

Use the **undo command-alias** command to cancel the alias configuration.

Before configuring a command alias, you need to enable the command alias function by the **enable command-alias** command.

By default, no command alias is configured.

Related command: **enable command-alias**.

Example

Configure an alias of “show” for the keyword **display**.

```
[XE] command-alias show display
The relationship between the commandkey and the alias is established!
```

Cancel the alias of “show”.

```
[XE] undo command-alias show
The relationship between the commandkey and the alias is canceled!
```

1.1.5 command-privilege

Syntax

command-privilege level *level* **view** *view command-key*

undo command-privilege view *view command-key*

View

System view

Parameter

level *level*: Command privilege level, in the range 0 to 3.

view *view*: View and view keyword. The following table lists the primary views and view keywords available in the XE IP PBX.

Table 1-1 Privilege keywords

Keyword	View
analogmodem	Analogmodem interface view
aux	AUX interface view
diagnose	Diagnose view
ftp-client	Ftp-client view
ethernet	Ethernet interface view
gigabitethernet	Gigabitethernet interface view
gui	GUI view
hidecmd	Hidecmd view
loopback	Loopback view
ls	LS view

Keyword	View
Ls-clg	LS-CLG view
ls-domain	LS-DOMAIN view
ls-emgc	LS-EMGC view
ls-gw	LS-GW view
ls-gw-prf	LS-GW-PRF view
ls-gw-ssb	LS-GW-SSB view
ls-gw-ssb-adi	LS-GW-SSB-ADI view
ls-gw-ssb-alarm	LS-GW-SSB-ALARM view
ls-gw-ssb-cba	LS-GW-SSB-CBA view
ls-gw-ssb-cfb	LS-GW-SSB-CFB view
ls-gw-ssb-cfc	LS-GW-SSB-CFC view
ls-gw-ssb-cfnr	LS-GW-SSB-CFNR view
ls-gw-ssb-cfo	LS-GW-SSB-CFO view
ls-gw-ssb-cft	LS-GW-SSB-CFT view
ls-gw-ssb-cfu	LS-GW-SSB-CFU view
ls-gw-ssb-clir	LS-GW-SSB-CLIR view
ls-gw-ssb-dnd	LS-GW-SSB-DND view
ls-gw-ssb-lcg	LS-GW-SSB-LCG view
ls-gw-ssb-ltc	LS-GW-SSB-LTC view
ls-gw-ssb-myring	LS-GW-SSB-MYRING view
ls-gw-ssb-myring-cg	LS-GW-SSB-MYRING-CG view
ls-gw-ssb-ssbm	LS-GW-SSB-SSBM view
ls-ms	LS-MS view
ls-nat&fw	LS-NAT&FW view
ls-og	LS-OG view
ls-og-office	LS-OG-OFFICE view
ls-og-prf	LS-OG-PRF view
ls-only	LS-ONLY view
ls-ps	LS-PS view
ls-srv	LS-SRV view
ls-srv-3pcc	LS-SRV-3PCC view
ls-srv-ao	LS-SRV-AO view

Keyword	View
ls-srv-cb	LS-SRV-CB view
ls-srv-gn	LS-SRV-GN view
ls-srv-gn-gc	LS-SRV-GN-GC view
ls-srv-gn-nc	LS-SRV-GN-NC view
ls-ssbr	LS-SSBR view
ls-ssbt	LS-SSBT view
ls-sst	LS-SST view
ma	MA view
ma-lang	MA-LANG view
ma-lang-fmt	MA-LANG-FMT view
ms	MS view
null	NULL view
olp	OLP view
ps	PS view
ps-gk	PS-GK view
ps-sip	PS-SIP view
shell	Shell view
system	System view
user-interface	User interface view

command-key: Command to be set.

Description

Use the **command-privilege** command to set the privilege level of a command in a specified view.

Use the **undo command-privilege view** command to remove the current setting.

There are four levels of command privilege: visit, monitor, system and manage, which are identified as 0, 1, 2, and 3 respectively. The administrator can assign permissions for users to access the corresponding view. A user can run the commands according to the privilege level associated with the user name. Also, the user can perform operations according to the permission granted through the user interface. If there is a conflict between these two privileges, the one with the lower level is adopted.

By default, the commands **ping**, **tracert** and **telnet** are of the visit level (with identifier 0); the commands **display**, **debugging** are of the monitor level (with identifier 1); the

configuration commands are of the system level (with identifier 2) and commands of user key setting, FTP, XMODEM, TFTP and file system operation are of the manage level (with identifier 3).

Example

Set the privilege level of the **interface** command to 0.

```
[XE] command-privilege level 0 view system interface
```

1.1.6 display clipboard

Syntax

display clipboard

View

Any view

Parameter

None

Description

Use the **display clipboard** command to display the contents of the clipboard.

Example

Display the contents of the system clipboard.

```
<XE> display clipboard
-----------------clipboard -----------------
        ip route 10.1.0.0 255.0.0.0 eth 0
```

1.1.7 display clock

Syntax

display clock

View

Any view

Parameter

None

Description

Use the **display clock** command to display the current system date and time.

If the system time is not correct, you can use the **clock datetime** command to make adjustments.

Related command: **clock datetime**.

Example

Display the current system date and time.

```
<XE> display clock
15:50:45 UTC Mon 2003/02/12
```

1.1.8 display command-alias

Syntax

display command-alias

View

Any view

Parameter

None

Description

Use the **display command-alias** command to view the current command alias settings. Note to enable command alias before using this command.

Related command: **enable command-alias**.

Example

Display the current command alias settings.

```
[XE] enable command-alias
Command alias switch is on!
[XE] display command-alias
index     alias       commandkey
0         show        display
```

1.1.9 display cpu-usage-for-user

Syntax

display cpu-usage-for-user [**configuration** | *number* [*offset*] [**verbose**] [**from-device**]]

View

Any view

Parameter

configuration: Displays the configuration information about the CPU usage statistics, including the enable/disable state, the statistical cycle, and the alarm threshold of the CPU usage statistics.

number: Number of the statistic entities to be displayed.

offset: Offset from the first entity to the last entity to be displayed.

verbose: Displays detail information.

from-device: Displays the information saved in a peripheral storage device (flash, hard disk, and so on). This option is not supported at present.

Description

Use the **display cpu-usage** command to display the statistics about the CPU usage.

The **display cpu-usage-for-user** command without any option is equivalent to **display cpu-usage-for-user 1 0 verbose**. It displays the last statistic entry of CPU usage in detail.

Example

Display detailed CPU usage statistics.

```
[XE] display cpu-usage-for-user
===== Current CPU usage info =====
CPU Usage Stat. Cycle: 37 (Second)
CPU Usage            : 4%
CPU Usage Stat. Time : 2005-04-11  13:39:45
CPU Usage Stat. Tick : 0x0(CPU Tick High) 0xf4bbad99(CPU Tick Low)
Actual Stat. Cycle   : 0x0(CPU Tick High) 0x37bab97d(CPU Tick Low)
```

1.1.10 display current-configuration

Syntax

display current-configuration [**interface** *interface-type* [*interface-number*] | **configuration** [**ls** | **system** | **user-interface**]]

View

Any view

Parameter

interface: Displays the configuration of the interface.

interface-type: Type of interface.

interface-number: Number of the interface.

configuration: Displays the specified configuration.

ls: Displays the location server configuration.

system: Displays the system configuration.

user-interface: Displays the configuration of the user interface.

Description

Use the **display current-configuration** command to view the current configuration of the XE IP PBX.

The currently configured parameters that are the same with the corresponding default parameters are not displayed.

You can use the **display current-configuration** command to see if the configurations take effect. Some configured parameters will not appear if the functions to which these parameters apply do not take effect.

Related command: **display saved-configuration**.

Example

Display currently valid parameters of the XE IP PBX.

```
<XE> display current-configuration
```

1.1.11 display diagnostic-information

Syntax

display diagnostic-information

View

Any view

Parameter

None

Description

Use the **display diagnostic-information** command to display the operating information of all the active modules of the system and collect all the information at a time so as to isolate the problem when failure occurs to the system. However, it is rather difficult for you to collect all the information at a time as there are many **display** commands involved. In this case, you can use the **display diagnostic-information** command to collect the operating information of all the active modules in the system

Example

Display the diagnostic information.

```
<XE> display diagnostic-information
```

1.1.12 display history-command

Syntax

display history-command

View

Any view

Parameter

None

Description

Use the **display history-command** command to display history command(s).

The terminal automatically saves recently-executed commands, that is, any input that ends with a carriage return. You can use the **display history-command** command to display the saved history commands.

Example

Display the history command(s).

```
<XE> display history-command
display interface
display interface e 1/0
```

1.1.13 display saved-configuration

Syntax

display saved-configuration

View

Any view

Parameter

None

Description

Use the **display saved-configuration** command to display the saved configuration of the XE IP PBX, which is valid after the next boot.

Related command: **display current-configuration**.

Example

Display configure file of XE IP PBX in storage device.

```
<XE> display saved-configuration
#
 sysname XE
#
interface Aux0
 link-protocol ppp
#
interface Ethernet0/0
#
interface Ethernet0/1
#
#interface NULL0
#
user-interface con 0
user-interface aux 0
user-interface vty 0 4
#
return
```

1.1.14 display this

Syntax

display this

View

Any view

Parameter

None

Description

Use the **display this** command to display the current configuration of the active view.

Example

Display the current configuration of the active view.

```
[XE] display this
#
 sysname XE
#
```

```
 tcp window 8
#
```

1.1.15 display version

Syntax

display version

View

Any view

Parameter

None

Description

Use the **display version** command to display the system version.

This command displays the information about the software version, main control board, interface board and so on.

Example

Display the system version of XE 2000 IP PBX.

```
<XE> display version
H3C Comware Platform Software
 Comware software, Version 3.30,ESS 0122P01
 Copyright (c) 2004-2007 Hangzhou H3C Technology Co., Ltd. All rights reserved.
 H3C XE 200 uptime is 0 week, 1 day, 0 hour, 14 minutes
 CPU type: PowerPC 8241 200MHz
 256M bytes SDRAM Memory
 32M bytes Flash Memory
 Pcb      Version:3.0
 Logic    Version:1.0
 BootROM  Version:9.16
  [SLOT 0] AUX      (Hardware)3.0, (Driver)1.0, (Cpld)1.0
  [SLOT 0] 1FE      (Hardware)3.0, (Driver)2.0, (Cpld)0.0
  [SLOT 0] 1FE      (Hardware)3.0, (Driver)2.0, (Cpld)0.0
```

1.1.16 enable command-alias

Syntax

enable command-alias

undo enable command-alias

View

System view

Parameter

None

Description

Use the **enable command-alias** command to enable the command alias function.

Use the **undo enable command-alias** command to disable the command alias function.

By default, the command alias function is disabled.

Example

Enable the command alias function.

```
[XE] enable command-alias
Command alias switch is on!
```

Disable the command alias function.

```
[XE] undo enable command-alias
Command alias switch is off!
```

1.1.17 header

Syntax

header [**shell** | **incoming** | **login**] *text*

undo header [**shell** | **incoming** | **login**]

View

System view

Parameter

login: The banner to be displayed before the login prompt.

shell: The banner of the user session establishment.

incoming: The banner of the login interface.

text: Contents of the banner.

Description

Use the **header** command to set the banner to be displayed.

Use the **undo header** command to disable the function.

If the banner properties are set, the related information appears when the user logs into the XE IP PBX from the terminal. Once the terminal connection is activated, the login banner appears on the terminal. If the login succeeds, the banner **shell** appears.

The beginning and ending characters of the text are the first character of *text*. The system will exit the interactive process after the ending character is entered.

If you do not want to enter the interactive process, just enter the same character twice and press <Enter>.

Example

Set the banner of the session establishment.

```
[XE] header shell %
SHELL : Hello! Welcome use XE 2000.%
```

Test the previous setting.

```
[XE] quit
<XE> quit
Press RETURN to get started

SHELL : Hello! Welcome use XE 2000.
<XE>
```

1.1.18 hotkey

Syntax

hotkey [**CTRL_G** | **CTRL_L** | **CTRL_O** | **CTRL_T** | **CTRL_U**] *command_text*

undo hotkey [**CTRL_G** | **CTRL_L** | **CTRL_O** | **CTRL_T** | **CTRL_U**]

View

System view

Parameter

CTRL_G: Assigns hot key <CTRL+G> to a command.

CTRL_L: Assigns hot key <CTRL+L> to a command.

CTRL_O: Assigns hot key <CTRL+O> to a command.

CTRL_T: Assigns hot key <CTRL+T> to a command.

CTRL_U: Assigns hot key <CTRL+U> to a command.

command_text: The command line associated with the hot key.

Description

Use the **hotkey** command to assign a hot key to a specific command line.

Use the **undo hotkey** command to restore the default setting.

By default, the hot key CTRL_G, CTRL_L, and CTRL_O are assigned to default commands as follows:

CTRL_G corresponds to the **display current-configuration** command (to display the current configuration);

CTRL_L corresponds to the **display ip routing-table** command (to display information on routing table);

CTRL_O corresponds to the **undo debugging all** command (to disable the display of all debugging information).

You can customize the hot key combination as needed.

Example

Associate the **display tcp status** command with the hot key CTRL_T.

```
[XE] hotkey ctrl_t display tcp status
[XE] display hotkey
----------------- HOTKEY -----------------

            =Defined hotkeys=
Hotkeys Command
CTRL_G  display current-configuration
CTRL_L  display ip routing-table
CTRL_O  undo debug all
CTRL_T  display tcp status

           =Undefined hotkeys=
Hotkeys Command
CTRL_U  NULL

            =System hotkeys=
Hotkeys Function
CTRL_A  Move the cursor to the beginning of the current line.
CTRL_B  Move the cursor one character left.
CTRL_C  Stop current command function.
CTRL_D  Erase current character.
CTRL_E  Move the cursor to the end of the current line.
CTRL_F  Move the cursor one character right.
CTRL_H  Erase the character left of the cursor.
CTRL_K  Kill outgoing connection.
CTRL_N  Display the next command from the history buffer.
CTRL_P  Display the previous command from the history buffer.
CTRL_R  Redisplay the current line.
```

```
CTRL_V  Paste text from the clipboard.
CTRL_W  Delete the word left of the cursor.
CTRL_X  Delete all characters up to the cursor.
CTRL_Y  Delete all characters after the cursor.
CTRL_Z  Return to the user view.
CTRL_]  Kill incoming connection or redirect connection.
ESC_B   Move the cursor one word back.
ESC_D   Delete remainder of word.
ESC_F   Move the cursor forward one word.
ESC_N   Move the cursor down a line.
ESC_P   Move the cursor up a line.
ESC_<   Specify the beginning of clipboard.
ESC_>   Specify the end of clipboard.
```

1.1.19 language-mode

Syntax

language-mode { **chinese** | **english** }

View

User view

Parameter

None

Description

Use the **language-mode** command to toggle the language modes of command line interface (CLI).

The default language mode is English.

Example

Switch from English mode to Chinese mode.

```
<XE> language-mode chinese
Change language mode, confirm? [Y/N]y
```

1.1.20 lock

Syntax

lock

View

User view

Parameter

None

Description

Use the **lock** command to lock the current user interface to prevent unauthorized access.

User interfaces include CON port, AUX port and VTY virtual terminal interface.

Once the **lock** command is entered, the system will prompt you to enter the password of screen saver and confirm the password, if one password is consistent with another, the system will be locked. If you want to enter the system afterwards, you must press <Enter> and enter the password to unlock system and enter it.

Example

Lock the current user interface (where the user logs in through console port).

```
<XE> lock
Password:
Again:
```

1.1.21 quit

Syntax

quit

View

Any view

Parameter

None

Description

Use the **quit** command to exit from the current view to the previous view. If you are in user view, you can use this command to exit the system.

There are three view levels, which are listed as follows (from low to high):

- User view (with user level 0)
- System view (with user level 3)
- Configuration view such as interface view.

Related command: **return**.

Example

Return to system view and then to user view from Ethernet1/0/0 port view.

```
[XE-Ethernet0/0] quit
[XE] quit
<XE>
```

1.1.22 return

Syntax

return

View

Any view except for user view

Parameter

None

Description

Use the **return** command to return to user view.

Alternatively, you can press <Ctrl+Z> to return to user view.

Related command: **quit**.

Example

Return from system view to user view.

```
[XE] return
<XE>
```

1.1.23 super

Syntax

super [*level*]

View

User view

Parameter

level: User level, in the range 0 to 3.

Description

Use the **super** command to switch from the current user level to a specified level.

User levels refer to the categories of login users, which fall into four levels. Corresponding to the level of command, users of different levels can only run the commands with the same or lower level after login.

The four levels of command are visit, monitor, system, and manage, which are described as follows:

- Visit level: The commands of network diagnostic tool, such as **ping** and **tracert**, and the commands sent out to access other devices, such as **telnet**, **rlogin**. Commands of this level do not allow you to save configuration files.
- Monitor level: The commands used for system maintenance and service troubleshooting, including **display** and **debugging**. Commands of this level do not allow you to save configuration files.
- System level: The commands of service configuration, including commands of routing and of each network layer. The commands provide users with direct network services.
- Manage level: The commands related to basic operation and system supporting module, including commands of file system, FTP, TFTP, downloading via XMODEM, and switching configuration file, power control, backplane controlling, user management, level setting, internal parameter setting (non-protocol specification or RFC specification), and so on.

To prevent unauthorized access, the system requires a password of a higher level to be entered to authenticate the user when switching from a lower level to a higher level. (in case **super password** [**level** *user-level*] { **simple** | **cipher** } *line* is set.) The password entered is not displayed for security. The system will switch to a higher level if the user has entered the correct password within 3 attempts; otherwise the user level remains unchanged.

Related command: **super password**.

Example

```
<XE> super 3
Password:
User privilege changes to 3 level, just equal or less this level's
commands can be used.
Privilege note: 0-VISIT, 1-MONITOR, 2-SYSTEM, 3-MANAGE
```

1.1.24 super password

Syntax

super password [**level** *user-level*] { **simple** | **cipher** } *password*

undo super password [**level** *user-level*]

View

System view

Parameter

user-level: User level, in the range 0 to 3.

simple: Specifies that the password be displayed in simple text by corresponding **display** commands.

cipher: Specifies that the password be displayed in cipher text by corresponding **display** commands.

password: Password with up to 16 characters. If you set to display the password in simple text, corresponding **display** commands display it as a string of up to 16 characters with no space, such as 1234567. If you set to display the password in cipher text, corresponding **display** commands display it as 24 characters, such as _(TT8F)Y\5SQ=^Q`MAF4<1!!.

Description

Use the **super password** command to set the password which is used when switching to a higher user level.

Use the **undo super password** command to remove the current setting.

Example

Set the password to zbr when switching from a lower level to level 3.

```
[XE] super password level 3 simple zbr
```

1.1.25 sysname

Syntax

sysname sys*name*

View

System view

Parameter

sysname: Name of the XE IP PBX, a string from 1 to 30 characters in length.

Description

Use the **sysname** command to set the name of the XE IP PBX.

The name of the XE IP PBX is H3C by default.

The modification to the name of an IP PBX can affect the prompt of the CLI. For the XE IP PBX named XE, the prompt of user view is <XE>.

Example

Set the domain name of the XE IP PBX to XE.

```
[H3C] sysname XE
[XE]
```

1.1.26 system-view

Syntax

system-view

View

User view

Parameter

None

Description

Use the **system-view** command to switch from user view to system view.

Related command: **quit**, **return**.

Example

Switch from user view to system view.

```
<XE> system-view
System View: return to User View with Ctrl+Z.
[XE]
```

Chapter 2 Ethernet Interface Configuration Commands

2.1.1 display interface ethernet

Syntax

display interface { **ethernet** | **gigabitethernet** | **Aux** | **NULL** } *interface-number*

View

Any view

Parameter

ethernet: Displays state information of FE interfaces. This parameter is available on XE 200 IP PBX.

gigabitethernet: Displays state information of GE interfaces. This parameter is available on XE 2000 IP PBX.

Aux: Displays the status information of the backup interface.

NULL: Displays the status information of the null interface.

interface-number: Specifies an interface. If it is not specified, the configuration and state information of all interfaces is displayed.

Description

Use the **display interface** command to view information on one or all Ethernet interfaces, such as the configuration parameters and current running status.

Example

Display state information of Ethernet interface 0/0.

```
[XE] display interface Ethernet 0/0
Ethernet0/0 current state :UP
Line protocol current state :UP
Description :  Ethernet0/0 Interface
The Maximum Transmit Unit is 1500, Hold timer is 10(sec)
Internet Address is 192.168.80.40/24
IP Sending Frames' Format is PKTFMT_ETHNT_2, Hardware address is
00e0-fc46-cbca
Media type is twisted pair, loopback not set, promiscuous mode not set
10Mb/s, Half-duplex, link type is autonegotiation
```

```
Output flow-control is disabled, input flow-control is disabled
Output queue : (Urgent queue : Size/Length/Discards)  0/50/0
Output queue : (Protocol queue : Size/Length/Discards) 0/500/0
Output queue : (FIFO queuing : Size/Length/Discards)  0/75/0
    Last 300 seconds input rate 0.00 bytes/sec, 0.00 packets/sec
    Last 300 seconds output rate 0.00 bytes/sec, 0.00 packets/sec
    Input: 0 packets, 0 bytes, 0 buffers
           0 broadcasts, 0 multicasts, 0 pauses
           0 errors, 0 runts, 0 giants
           0 crc, 0 align errors, 0 overruns
           0 dribbles, 0 drops, 0 no buffers
    Output:0 packets, 0 bytes, 0 buffers
           0 broadcasts, 0 multicasts, 0 pauses
           0 errors, 0 underruns, 0 collisions
           0 deferred, 0 lost carriers
```

2.1.2 duplex

Syntax

duplex { **full** | **half** | **negotiation** }

undo duplex

View

Ethernet interface view

Parameter

full: Sets the operating mode of the Ethernet interface to full duplex.

half: Sets the operating mode of the Ethernet interface to half duplex.

negotiation: Sets the operating mode of the Ethernet interface to auto-negotiation.

Description

Use the **duplex** command to set the operating mode of the Ethernet interface.

Use the **undo duplex** command to restore the default operating mode, that is, auto-negotiation.

When connected to a hub, the Ethernet interface must operate in half duplex mode; but when connected to a network device that operates in full duplex, an Ethernet switch for example, it must operate in full duplex too.

Before setting the Ethernet interface to auto-negotiation mode, you must ensure the remote interface also operates in this mode. If this is uncertain, you are recommended to manually set the same operating mode on the two sides.

Related command: **speed**, **display interface**.

Example

Set the FE interface to operate in full-duplex mode.

```
[XE-Ethernet0/0] duplex full
```

2.1.3 interface

Syntax

interface *type number*

undo interface *type number*

View

System view

Parameter

type: Interface type.

number: Interface number. The XE IP PBX numbers interfaces by type. The interfaces of each type are numbered beginning with 0 or 1.

Description

Use the **interface** command to enter the desired interface view or create a logical interface or sub-interface.

Use the **undo interface** command to delete the specified logical interface or sub-interface.

Table 2-1 Comware-supported interface types

Interface type	Description	Interface attributes
AUX	Backup interface	Physical interface
GigabitEthernet	Gigabit Ethernet interface (provided only by XE 2000 IP PBX)	Physical interface
Ethernet	Fast Ethernet interface (provided only by XE 200 IP PBX)	Physical interface
Loopback	Loopback interface	Logical interface
NULL	Null interface	Logical interface

On the XE IP PBX, an interface is represented by interface type + interface number, for example, Ethernet 0/0.

For your convenience, you can abbreviate interface type to the minimum number of letters that define a unique abbreviation, for example, Ethernet 0/0 to e0/0.

Executing the **interface** command enables you to enter actual physical interface view, and to create a logical interface as needed.

Note that you can use the **undo interface** command to delete the logical interfaces that you have created.

Example

Enter Ethernet interface view from system view.

```
[XE] interface ethernet 0/0
[XE-Ethernet0/0]
```

2.1.4 ip address

Syntax

ip address *ip-address net-mask*

undo ip address *ip-address net-mask*

View

Interface view

Parameter

ip-address: IP address of an interface, in dotted decimal notation.

net-mask: Subnet mask, in dotted decimal notation.

Description

Use the **ip address** command to set the IP address of an interface.

Use the **undo ip address** command to remove the IP address of an interface.

By default, an interface has no IP address.

The IP addresses fall into five categories, and you can choose an appropriate IP subnet according to you actual circumstance. In addition, all "0s" in the host portion of the address represent the network address and all "1s" in the host portion of the address represents a broadcast address, neither of which can be used as a general IP address.

The subnet mask is used to identify the network number of an IP address. For example, the IP address of a router Ethernet interface is 129.9.30.42, and the mask is 255.255.0.0. After performing the "and" operation with the IP address and the mask, you can get the number (129.9.0.0) of the network where the router Ethernet interface is located.

In addition, any two IP addresses of the interfaces on the XE IP PBX can be located in the same subnet.

Related command: **ip route-static**, **display interface**.

Example

Set the primary IP address of the interface GigabitEthernet0/0 to 129.102.0.1, with the subnet mask of 255.255.255.0.

```
[XE2000-GigabitEthernet0/0] ip address 129.102.0.1 255.255.255.0
```

2.1.5 loopback (Ethernet/Gigabitethernet Interface)

Syntax

loopback

undo loopback

View

Ethernet interface view

Parameter

None

Description

Use the **loopback** command to enable local loopback on the Ethernet interface.

Use the **undo loopback** command to disable local loopback on the interface.

By default, local loopback is disabled on the Ethernet interface. Local loopback is only intended for test purpose.

Note:

An Ethernet interface with loopback enabled is operating in full-duplex mode. After loopback is disabled, the original operating mode is resumed.
For a GE electrical interface that operates at 1000 Mbps or in auto-negotiation mode, its rate is forcibly switched to 100 Mbps after local loopback is enabled, and resumed after local loopback is disabled.

Example

Enable local loopback on the FE interface 0/0.

```
[XE-Ethernet0/0] loopback
```

2.1.6 mtu (Ethernet/Gigabitethernet Interface)

Syntax

mtu *size*

undo mtu

View

Ethernet interface view

Parameter

size: MTU size of the Ethernet interface in bytes. The value is in the range of 46 to 1500 for Ethernet_II frames and 46 to 16384 for Gigabit Ethernet frames.

Description

Use the **mtu** command to set the MTU for an Ethernet interface.

Use the **undo mtu** command to restore the default, or 1500 bytes.

The setting of MTU affects fragmentation and reassembly of IP packets on the Ethernet interface. After you change MTU of the interface using the **mtu** command, you need to execute the commands **shutdown** and **undo shutdown** on the interface to have the new MTU take effect.

Related command: **display interface**.

Example

Set the MTU of FE interface 1/0 to 1492.

```
[XE-Ethernet0/0] mtu 1492
```

2.1.7 promiscuous

Syntax

promiscuous

undo promiscuous

View

Ethernet interface view

Parameter

None

Description

Use the **promiscuous** command to enable the Ethernet interface to operate in the

promiscuous mode.

Use the **undo promiscuous** command to disable the Ethernet interface from operating in the promiscuous mode.

By default, the Ethernet interface operates in the non-promiscuous mode.

When the Ethernet interface operates in the promiscuous mode, it receives all correct Ethernet packets without checking their MAC addresses. This mode is applied to traffic monitoring on the network.

Example

Enable the interface Ethernet 0/0 to operate in the promiscuous mode.

```
[XE-Ethernet0/0] promiscuous
```

2.1.8 speed

Syntax

speed { **10** | **100** | **1000** | **negotiation** }

undo speed

View

Ethernet interface view

Parameter

10: Forces the Ethernet interface to operate at 10 Mbps.

100: Forces the Ethernet interface to operate at 100 Mbps.

1000: Forces the Ethernet interface to operate at 1000 Mbps (only for GE interfaces).

negotiation: Sets the Ethernet interface to operate in auto-negotiation mode.

Description

Use the **speed** command to set the operating speed of the Ethernet interface.

Use the **undo speed** command to restore the default mode, or auto-negotiation.

Before setting the Ethernet interface to auto-negotiation mode, you must ensure the remote interface also operates in this mode. If this is uncertain, you are recommended to manually set the same operating mode on the two sides.

For an FE electrical interface, you can set its speed to 10 Mbps, 100 Mbps or auto-negotiation, and for a GE electrical interface, 1000 Mbps in addition. However, the speeds of FE fiber-optic interfaces and GE fiber-optic interfaces are fixed to 100 Mbps and 1000 Mbps respectively, allowing no modification.

Note:

You cannot configure a GE electrical interface to operate at 1000 Mbps and in half-duplex mode at the same time.

Related command: **duplex**, **display interface**.

Example

Set the operating speed of FE interface 1/0 to 10Base-T.

```
[XE-Ethernet0/0] speed 10
```

Chapter 3 Static Route Configuration Commands

3.1.1 delete static-routes all

Syntax

delete static-routes all

View

System view

Parameter

None

Description

Use the **delete static-routes all** command to delete all the static routes.

The system will prompt you to confirm the operation.

Related command: **ip route-static**, **display ip routing-table**.

Example

Delete all the static routes.

```
[XE] delete static-routes all
Are you sure to delete all the static routes?[Y/N]y
```

3.1.2 display ip routing-table

Syntax

display ip routing-table

View

Any view

Parameter

None

Description

Use the **display ip routing-table** command to display the summary of the routing table.

Each line of the routing table represents a route in summary, which includes destination address/mask length, protocol, privilege, cost, next hop and outgoing interface.

Use the **display ip routing-table** command to view the currently used routing, that is, the best route.

Example

Display the summary of the current routing table.

```
<XE> display ip routing-table
Routing Table: public net
Destination/Mask   Protocol Pre  Cost        Nexthop         Interface
127.0.0.0/8        DIRECT   0    0           127.0.0.1       InLoopBack0
127.0.0.1/32       DIRECT   0    0           127.0.0.1       InLoopBack0
192.168.80.0/24    DIRECT   0    0           192.168.80.40   Ethernet0/0
192.168.80.40/32   DIRECT   0    0           127.0.0.1       InLoopBack0
```

3.1.3 ip route-static

Syntax

ip route-static *ip-address* { *mask* | *mask-length* } { *interface-name* | *nexthop-address* } [**preference** *preference-value*] [**reject** | **blackhole**]

undo ip route-static *ip-address* { *mask* | *mask-length* } [*interface-name* | *nexthop-address*] [**preference** *preference-value* | **reject** | **blackhole**]

View

System view

Parameter

ip-address: Destination IP address in dotted decimal notation.

mask: Mask.

mask-length: Mask length. The 1s in the 32-bit mask must be consecutive; therefore, the mask in dotted decimal notation can be replaced by *mask-length*, which is the number of the consecutive 1s in the mask.

interface-name: Specifies the outgoing interface name of the static route. You may specify the public network interface as the outgoing interface.

nexthop-address: Specifies the next hop IP address (in dotted decimal notation) of the static route.

preference-value: Preference level of the static route ranging from 1 to 255.

reject: Indicates an unreachable route.

blackhole: Indicates a blackhole route.

Description

Use the **ip route-static** command to configure static routes.

Use the **undo ip route-static** to delete the static routes.

Two static routes to the same destination and with the same next hop but with different preferences are totally different. The route with the smaller preference value (higher preference level) will be chosen as the current route.

Use the **undo ip route-static** command to delete all the static routes to the same destination and with the same next hop.

Use the **undo ip route-static preference** command to delete the static routes with specified preference.

By default, the system obtains the sub-net route direct to the voice server. If no preference is specified when configuring static routes, its default value is 60. If **reject** or **blackhole** is not specified, it defaults to reachable routes.

Notes:

- If the destination IP address and the mask are both 0.0.0.0, it is the default route. If it fails to find a route from the routing table, the packet will be forwarded via the default route.
- You may flexibly apply the routing management policy for preference privilege setting. For instance, when configuring a number of routes to the same destination address, if the routes are of the same privilege, load sharing can be performed; if not, route backup can be performed.
- To configure static route, you can specify either outgoing interface or next hop. Which one is adopted in practice depends on actual condition. For the interfaces which can translate network address to link layer address or point-to-point interface, transmission interface or next hop address can be specified. But for NBMA interfaces, that support point-to-multi-point, you should configure, besides IP route, secondary routes, i.e. the mapping from IP address to link layer address. In such condition, not the transmission interface but the next hop IP address should be configured when configuring static route.
- When configuring two static routes with equal cost, you must do it in the same way, that is, configuring both to next hop, or both to outgoing interface. You cannot configure equal cost routes with different configurations.

Related command: **display ip routing-table**.

Example

Set the next hop of the default route to 129.102.0.2.

```
[XE] ip route-static 0.0.0.0 0.0.0.0 129.102.0.2
```

Process Server Configuration

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Chapter 1 Process Server

1.1 Process Server Commands

1.1.1 debugging process-server

Syntax

debugging process-server { **adapter** | **all** | **bkm** | **cdp** | **cm** | **csm** | **hadpt** | **hrm** | **hsm** | **hstack** | **om** | **rm** | **sm** | **stack** | **tucl** } **level** *level*

undo debugging process-server { **adapter** | **all** | **bkm | cdp** | **cm** | **csm** | **hadpt** | **hrm** | **hsm** | **hstack** | **om** | **rm** | **sm** | **stack** | **tucl** }

View

User view

Parameter

adapter: Enables adapter layer debugging.

all: Enables all debugging.

bkm: Enables backup management (BKM) module debugging.

cdp: Enables call distribute process (CDP) module debugging.

cm: Enables call management (CM) module debugging.

hadpt: Enables H.323 adapter module debugging.

hrm: Enables H.323 registration management (HRM) module debugging.

hsm: Enables H.323 subscriber management (HSM) module debugging.

hstack: Enables H.323 stack debugging.

rm: Enables SIP register management (RM) module debugging.

sm: Enables SIP subscriber management (SM) module debugging.

om: Enables operation management (OM) module debugging.

stack: Enables SIP protocol stack debugging.

tucl: Enables TCP/UDP control layer (TUCL) module debugging.

csm: Enables CSM module debugging.

level *level*: Debugging information level.

Description

Use the **debugging process-server** command to debug the process server (PS).

Use the **undo debugging process-server** command to restore the default level of output debugging information.

The argument *level* can take on a value in the range 0 to 7. By default, the debugging at all levels is disabled. If it is set to 4, the debugging information at levels 1 through 4 is output. If it is set to 0, no debugging information is output.

The following table describes levels of debugging information.

Table 1-1 Debugging information levels

Level	Description
0	No debugging information
1: DEBUG_LEVEL_EMERGENCY	Memory block request failures Timer request failures
2: DEBUG_LEVEL_ALERT	Void pointer, invalid memory operation PS-LS connection state switch
3: DEBUG_LEVEL_ERROR	Control block state anomalies/mismatches Invalid/unexpected control block index Invalid/unexpected PID/module ID Function returns failure, affecting the main calling function Invalid message type
4: DEBUG_LEVEL_WARNING	Function returns failure, without affecting the main calling function Header information of the received messages Abnormal timer timeout State transition
5: DEBUG_LEVEL_NOTIFICATION	Environment anomalies without affecting operation Key service procedures Header information of the sent messages
6: DEBUG_LEVEL_INFORMATIONAL	Key processing procedures of the module/function Memory block request/release Normal timer timeout Crucial information in the MD5 algorithm Crucial information in the Hash algorithm

Level	Description
7: DEBUG_LEVEL_DEBUGGING	Generic procedures Related processing functions, such as extraction and addition of optional IE Contents of the IE list in messages; message contents Description on function entry calling and the returned value

Example

Debug the SM module and output the debugging information at levels 1 through 5.

```
<XE> debugging process-server sm level 5
```

1.1.2 display debugging process-server

Syntax

display debugging process-server

View

Any view

Parameter

None

Description

Use the **display debugging process-server** command to display information about PS debugging levels.

Example

Display information about PS debugging levels.

```
<XE2000> display debugging process-server
 CM              debugging level         3
 SM              debugging level         3
 HSM             debugging level         3
 RM              debugging level         3
 HRM             debugging level         3
 OM              debugging level         3
 CDP             debugging level         3
 TUCL            debugging level         3
 ADPT            debugging level         3
 STACK           debugging level         3
```

```
HADPT           debugging level         3
HSTACK          debugging level         3
CSM             debugging level         3
BKM             debugging level         3
```

1.1.3 display process-server call-information

Syntax

display process-server call-information

View

Any view

Parameter

None

Description

Use the **display process-server call-information** command to display information about the calls being processed on the PS.

Example

Display information about the calls being processed on the PS.

```
[XE] display process-server call-information
     NO.  CCB-mode  CM-CCB   Information  Caller   Callee
------------------------------------------------------------
       0     NORMAL       0        TYPE:  H323-DEVICE  H323-DEVICE
                           SM/HSM CCB:            0            1
```

1.1.4 display process-server location-server status

Syntax

display process-server location-server status

View

Any view

Parameter

None

Description

Use the **display process-server location-server status** command to display state information of the LS (LS) administering this PS.

Example

Display state information of the LS administering this PS.

```
[XE] display process-server location-server status
---------- Location Server Information ----------
Location Server index:         0
Mode                           Local
Connected Process Server:      xe200
PS HeartBeat Key:              xe200
Heartbeat Status:              Authorized
```

1.1.5 display process-server statistics

Syntax

display process-server statistics { **adapter** | **all** | **bkm | cdp** | **cm** | **csm** | **hadpt** | **hrm** | **hsm** | **hstack** | **rm** | **sm** | **stack** | **tucl** }

View

Any view

Parameter

adapter: Displays statistics about the adapter layer.

all: Displays all statistics.

bkm: Displays statistics about the BKM module.

cdp: Displays statistics about the CDP module.

cm: Displays statistics about the CM module.

csm: Displays statistics about the CSM module.

hadpt: Displays statistics about the H.323 adapter module.

hrm: Displays statistics about the HRM module.

hsm: Displays statistics about the HSM module.

hstack: Displays statistics about the H.323 stack.

rm: Displays statistics about the SIP RM module.

sm: Displays statistics about the SIP SM module.

stack: Displays statistics about the SIP protocol stack.

tucl: Displays statistics about the TUCL module.

Description

Use the **display process-server statistics** command to display statistics about the gatekeeper or process server, such as SIP and H.323 messages sent and received, messages exchanged between internal modules, and timer messages.

Example

Display statistics about the SM module

```
<XE> display process-server statistics sm
SAI Message Statistics of SM:
 SAI Message     total      rcv     send      err     dupr     dups     disc
-------------------------------------------------------------------------
    RINGING:         0        0        0        0        0        0        0
   REDIRECT:         0        0        0        0        0        0        0
         OK:         0        0        0        0        0        0        0
   REGISTER:         0        0        0        0        0        0        0
     INVITE:         0        0        0        0        0        0        0
        ACK:         0        0        0        0        0        0        0
        Bye:         0        0        0        0        0        0        0
     CANCEL:         0        0        0        0        0        0        0
       INFO:         0        0        0        0        0        0        0
      PRACK:         0        0        0        0        0        0        0
INVALID SAI:         0        0        0        0        0        0        0
 Q931 Message Statistics of SM:
 Q931 Message        total     rcv     send     err     dupr     dups     disc
-------------------------------------------------------------------------
           Setup:        0       0        0       0       0        0        0
       Setup Ack:        0       0        0       0       0        0        0
  Callproceeding:        0       0        0       0       0        0        0
        Progress:        0       0        0       0       0        0        0
        Alerting:        0       0        0       0       0        0        0
         Connect:        0       0        0       0       0        0        0
     Connect Ack:        0       0        0       0       0        0        0
         Release:        0       0        0       0       0        0        0
Release Complete:        0       0        0       0       0        0        0
     Information:        0       0        0       0       0        0        0
        Facility:        0       0        0       0       0        0        0
          Status:        0       0        0       0       0        0        0
        Redirect:        0       0        0       0       0        0        0
          Notify:        0       0        0       0       0        0        0
        H245Info:        0       0        0       0       0        0        0
        BearInfo:        0       0        0       0       0        0        0
     Inter Check:        0       0        0       0       0        0        0
```

```
      Pre Setup:        0        0        0        0        0        0        0
        Pre Ack:        0        0        0        0        0        0        0
     BW Request:        0        0        0        0        0        0        0
    BW Response:        0        0        0        0        0        0        0
   Invalid Q931:        0        -        -        -        -        -        -
```

The following table describes the fields on the **display process-server statistics sm** command.

Table 1-2 Description on the fields of **display process-server statistics sm**

Field	Description
SAI Message	Stack application interface (SAI) messages
RINGING	Ringing messages
REDIRECT	Redirect messages
OK	OK messages
REGISTER	Register messages
INVITE	Call request messages
ACK	Acknowledgement messages
Bye	Call ending messages
CANCEL	Call cancel messages
INFO	Information messages
PRACK	Provisional response acknowledgement messages
INVALID SAI	Invalid SAI messages
Q931 Message	Q.931 messages
Setup	Call setup messages
Setup Ack	Call setup acknowledgement messages
Callproceeding	Callproceeding messages
Progress	Progress messages
Alerting	Alerting messages
Connect	Connect messages
Connect Ack	Connect acknowledgement messages
Release	Release messages
Release Complete	Release complete messages
Information	Information messages
Facility	Facility messages
Status	Status messages

Field	Description
Redirect	Redirect messages
Notify	Notify messages
H245Info	H245Info messages
BearInfo	BearInfo messages
Inter Check	Inter Check messages
Pre Setup	Pre Setup messages
Pre Ack	Pre Ack messages
BW Request	BW Request messages
BW Response	BW Response messages
Invalid Q931	Invalid Q.931 messages
total	Total number of messages
rcv	Number of received messages
send	Number of sent messages
err	Number of errors
dupr	Number of received message duplicates
dups	Number of resent messages
disc	Number of discarded messages

1.1.6 gatekeeper

Syntax

gatekeeper

View

PS view

Parameter

None

Description

Use the **gatekeeper** command to enter PS-GK view.

Example

Enter PS-GK view.

```
[XE-ps] gatekeeper
```

```
[XE-ps-gk]
```

1.1.7 gk-config

Syntax

gk-config { **rasport** | **q931port** | **2nd-port** } *port-number*

undo gk-config { **rasport** | **q931port** | **2nd-port** }

View

PS-GK view

Parameter

rasport: Specifies the RAS port on the gatekeeper.

q931port: Specifies the Q931 port on the gatekeeper.

2nd-port: Specifies the backup RAS port on the gatekeeper. The backup RAS port is used to assist the RAS port for RAS signaling transmission and receiving.

port-number: Port number. The default RAS port is 1719. The default Q931 port is 1720.

Description

Use the **gk-config** command to configure the port used by the gatekeeper to transmit and receive RAS signaling, the backup port used by the gatekeeper to transmit or receive RAS signaling, and the port used by the PS to listen the TCP connection requests for call control signaling channel (that is, the Q931 port).

Use the **undo gk-config rasport** command to restore the default port used to transmit and receive RAS signaling.

Use the **undo gk-config q931port** command to restore the default port used to transmit and receive Q931 signaling.

Use the **undo gk-config 2nd-port** command to delete the backup RAS port configuration of the gatekeeper.

Example

Configure the gatekeeper to use port 1111 for transmitting and receiving RAS signaling.

```
[XE-ps-gk] gk-config rasport 1111
```

1.1.8 heartbeat password

Syntax

heartbeat password *password*

undo heartbeat password

View

PS view

Parameter

password: Heartbeat password, 1 to 16 characters. It defaults to XEngine.

Description

Use the **heartbeat password** command to configure a password for heartbeat authentication.

Use the **undo heartbeat password** command to restore the default heartbeat password.

Example

Set the heartbeat password for the PS to hb1234.

```
[XE-ps] heartbeat password hb1234
```

1.1.9 lrq-mode

Syntax

lrq-mode { **forward** | **terminated** }

undo lrq-mode

View

PS-GK view

Parameter

forward: LRQ forward mode.

Terminated: LRQ terminated mode.

Description

Use the **lrq-mode** command to set the LRQ signaling processing method of the gatekeeper.

Use the **undo lrq-mode** command to restore the default LRQ signaling processing method of the gatekeeper.

By default, the terminated mode is used.

Example

Set the LRQ signaling processing method of the gatekeeper as forward.

```
[xe-ps-gk]lrq-mode forward
```

1.1.10 irr-frequency

Syntax

irr-frequency *irr-frequency-value*

undo irr-frequency

View

PS-GK view

Parameter

irr-frequency-value: Interval for reporting Info_Request_Response (IRR) messages. It defaults to 60 seconds.

Description

Use the **irr-frequency** command to configure the interval at which gateways report their state information to the gatekeeper regularly. If the interval is set to 0, gateways do not report IRR regularly.

Use the **undo irr-frequency** command to restore the default interval at which gateways report their state information to the gatekeeper regularly.

Example

Enable gateways to report IRR at 120-second intervals.

```
[XE-ps-gk] irr-frequency 120
```

1.1.11 ls-mode

Syntax

ls-mode *id-priority* { **local** | { **remote ip-address** *ip-address* [**port** *port*] } }

undo ls-mode { *id-priority* | **all** }

View

PS view

Parameter

id-priority: ID of the LS used by the PS. This ID ranges from 0 to 4, representing the LS priority in an ascending order.

local: Uses the co-located LS.

remote: Uses an LS that resides on a different device.

ip-address: Specifies the IP address of the remote LS. It defaults to 0.0.0.0.

port: Port number of the remote LS. It defaults to 13579.

Description

Use the **ls-mode** command to configure an LS table entry for the PS. The LS table can contain up to five entries, with at most one local LS. LS IDs must be non-identical.

Use the **undo ls-mode** command to delete a specified entry or all entries from the LS table.

Example

Assign the remote LS at 10.1.5.6 to the PS. Adopt the default port number and specify the LS priority as 1.

```
[XE-ps] ls-mode 1 remote 10.1.5.6
```

Note:

If this is not the first time that you specify a remote LS, the port number that you configured last time for the LS, instead of the default port number, applies.

1.1.12 policy call-interrupt-by-long-time

Syntax

policy call-interrupt-by-long-time {enable | disable}

undo policy call-interrupt-by-long-time

View

PS view

Parameter

Enable: Enables a long-time call interruption function.

Disable: Disables a long-time call interruption function.

Description

Use the **policy call-interrupt-by-long-time** command to enable or disable the long-time call interruption function.

Use the **undo policy call-interrupt-by-long-time** command to restore the default.

By default, the long-time call interruption function is disabled.

Example

Enable the long-time call interruption function.

```
[XE-ps]policy call-interrupt-by-long-time enable
```

1.1.13 policy call-interrupt-time

Syntax

policy call-interrupt-time *call-interrupt-time*

undo policy call-interrupt-time

View

PS view

Parameter

call-interrupt-time: The timeout interval for the long-time call interruption, ranging from 1440 to 14400 seconds. The timeout interval defaults to 2880 seconds.

Description

Use the **policy call-interrupt-time** command to set the timeout interval for the long-time call interruption. If the *call-interrupt-time* expires, the conversation will stop.

Use the **undo policy call-interrupt-time** command to restore the default timeout interval.

By default, the timeout interval for the long-time call interruption is 2880 minutes.

Example

Configure the timeout interval to 1440 minutes.

[XE-ps] policy call-interrupt-time 1440

1.1.14 ps-config

Syntax

ps-config *identifier* **interface** *interface-type interface-number*

undo ps-config

View

PS view

Parameter

identifier: Identifier of the PS.

interface-type: Interface type.

interface-number: Interface number.

Description

Use the **ps-config** command to configure the basic information about the process server.

Use the **undo ps-config** command to delete the basic information about the process server.

By default, the identifier of the process server is PS.

Example

Configure a gatekeeper, setting its ID to ps1@h3c and its interface to Ethernet0/0.

```
[XE-ps] ps-config ps1@h3c interface ethernet 0/0
```

1.1.15 repair-tcp

Syntax

repair-tcp { **enable** | **disable** }

undo repair-tcp

View

PS-SIP view

Parameter

enable: Enables TCP connection repair.

disable: Disables TCP connection repair.

Description

Use the **repair-tcp** command to enable or disable TCP connection repair.

Use the **undo repair-tcp** command to restore the default.

By default, TCP connection repair is enabled.

Example

Enable TCP connection repair.

```
[XE-ps-sip] repair-tcp enable
```

1.1.16 reset process-server statistics

Syntax

reset process-server statistics { **adapter** | **all** | **bkm | cdp** | **cm** | **csm** | **hadpt** | **hrm** | **hsm** | **hstack** | **rm** | **sm** | **stack** | **tucl** }

View

User view

Parameter

adapter: Clears statistics about the adapter layer.

all: Clears all statistics.

bkm: Clears statistics about the BKM module.

cdp: Clears statistics about the CDP module.

cm: Clears statistics about the CM module.

csm: Clears statistics about the CSM module.

hadpt: Clears statistics about the H.323 adapter module.

hrm: Clears statistics about the HRM module.

hsm: Clears statistics about the HSM module.

hstack: Clears statistics about the H.323 stack.

rm: Clears statistics about the RM module.

sm: Clears statistics about the SM module.

stack: Clears statistics about the SIP protocol stack.

tucl: Clears statistics about the TUCL module.

Description

Use the **reset process-server statistics** command to clear statistics for the PS, such as SIP and H.323 messages sent and received, messages exchanged between internal modules, and timer messages.

Example

Clear all statistics for the PS.

```
<XE> reset process-server statistics all
```

1.1.17 response-irr

Syntax

response-irr { **off** | **on** }

undo response-irr

View

PS-GK view

Parameter

off: Disables the gatekeeper to respond with IACK messages to IRR messages.

on: Enables the gatekeeper to respond with IACK messages to IRR messages.

Description

Use the **response-irr** command to disable or enable the gatekeeper to respond with IACK messages to IRR messages.

Use the **undo response-irr** command to restore the default setting of the IRR response switch.

By default, the **on** parameter applies.

Example

Disable the gatekeeper to respond with IACK messages to IRR messages.

```
[XE-ps-gk] response-irr off
```

1.1.18 sip

Syntax

sip

View

PS view

Parameter

None

Description

Use the **sip** command to enter SIP view.

Example

Enter SIP view.

```
[XE-ps] sip
[XE-ps-sip]
```

1.1.19 sip-config

Syntax

sip-config port *sip-port-number*

View

PS-SIP view

Parameter

port: Specifies the SIP signaling port of the PS.

sip-port-number: Port number. It defaults to 5060.

Description

Use the **sip-config** command to configure the port where the PS receives/transmits SIP signaling.

Example

Set the SIP signaling port number of the PS to 2222.

```
[XE-ps-sip] sip-config port 2222
```

1.1.20 start (PS view)

Syntax

start

View

PS view

Parameter

None

Description

Use the **start** command to enable the PS. Enabling the PS will enable the gatekeeper and the SIP server.

By default, the PS is disabled.

Example

Start the PS.

```
[XE-ps] start
```

1.1.21 start (PS-GK view)

Syntax

start

View

PS-GK view

Parameter

None

Description

Use the **start** command to enable the gatekeeper.

By default, the gatekeeper is disabled.

Example

Start the gatekeeper.

```
[XE-ps-gk] start
```

1.1.22 start (PS-SIP view)

Syntax

start

View

PS-SIP view

Parameter

None

Description

Use the **start** command to enable the SIP server.

By default, the SIP server is disabled.

Example

Enable the SIP server.

```
[XE-ps-sip] start
```

1.1.23 stop (PS-GK view)

Syntax

stop

View

PS-GK view

Parameter

None

Description

Use the **stop** command to disable the gatekeeper.

Disabling the gatekeeper will not disable the PS.

By default, the gatekeeper is disabled.

Example

Disable the gatekeeper.

```
[XE-ps-gk] stop
```

1.1.24 stop (PS-SIP view)

Syntax

stop

View

PS-SIP view

Parameter

None

Description

Use the **stop** command to disable the SIP Server.

Disabling the SIP server will not disable the PS.

By default, the SIP server is disabled.

Example

Disable the SIP server.

```
[XE-ps-sip] stop
```

1.1.25 stop (PS view)

Syntax

stop

View

PS view

Parameter

None

Description

Use the **stop** command to disable the PS.

Disabling the PS will disable the gatekeeper and the SIP server.

Example

Disable the PS.

```
[XE-ps] stop
SIP Server stopped.
Gatekeeper stopped.
Process Server stopped.
```

1.1.26 timeout callee

Syntax

timeout callee ringing-time *time*

undo timeout callee ringing-time

View

PS view

Parameter

ringing-time: Configures the maximum ringing duration allowed for each called party.

time: Maximum ringing duration for each called party, in the range of 25 to 50 seconds. It defaults to 40 seconds.

Description

Use the **timeout callee ringing-time** command to configure the maximum ringing duration allowed for each called party.

Use the **undo timeout callee ringing-time** command to restore the default maximum ringing duration allowed for each called party.

Example

Configure the maximum ringing duration for a single called party to 50 seconds.

```
[XE200-ps] timeout callee ringing-time 50
```

1.1.27 timeout caller

Syntax

timeout caller wait-connect *time*

undo timeout caller wait-connect

View

PS view

Parameter

wait-connect: Configures the maximum duration that the calling party waits for the called party to pick up the phone.

time: Maximum waiting time, in the range of 30 to 100 seconds. It defaults to 90 seconds.

Description

Use the **timeout caller wait-connect** command to configure the maximum duration that the calling party waits for the called party to pick up the phone.

Use the **undo timeout caller wait-connect** command to restore the default.

Example

Set the maximum duration that the calling party waits for the called party to pick up the phone to 60 seconds.

```
[XE200-ps] timeout caller wait-connect 60
```

1.1.28 tracecall

Syntax

tracecall *number*

undo tracecall

View

PS view

Parameter

number: Number to be traced, ranging within 31 bits.

Description

Use the **tracecall** command to trace calls related to the specified number and print the debugging information on the caller and callee related to the number.

Use the **undo tracecall** command to disable call tracing.

By default, the related debugging information at levels 1 through 7 is printed.

Note:

Before using the **tracecall** command, turn on the debugging information output display switch with the **terminal debugging** command and the **terminal monitor** command.

Example

Trace the calls related to number 4000.

```
<XE> terminal debugging
<XE> terminal monitor
<XE> system-view
[XE] process-server
[XE-ps] tracecall 4000
*0.1234730 XE2000 XE/8/XEngine:
 [ HSM >-< Handle = 0 >-< Informational >-< 2005-05-13 09:05:51 ]
 >> HSMGetCMIndex : After receive LRQ or caller ARQ , HSM allocate new CM CR.
 File:ps_hsm_core.c, 1235
```

Location Server Configuration

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Chapter 1 Location Server Commands

1.1 Location Server Commands

1.1.1 authentication (LS-GW view)

Syntax

authentication { **disable** | **enable** }

undo authentication

View

LS-GW view

Parameter

disable: Disables the gateway from performing authentication.

enable: Enables the gateway to perform authentication.

Description

Use the **authentication** command to set the authentication mode of a gateway.

Use the **undo authentication** command to restore the default setting.

Authentication is disabled by default.

Example

Enable the gateway gw01 to perform the authentication.

```
[XE-ls-gw-gw01] authentication enable
```

1.1.2 bearer-capability (LS-GW view)

Syntax

bearer-capability { audio | video }

undo bearer-capability

View

LS-GW view

Parameter

audio: Specifies audio type only.

video: Specifies video and audio types.

Description

Use the **bearer-capability** command to specify the bearer capability type for the gateway, that is, to specify the service type (bearer capability type) supported in the Q.931 header of setup messages sent to the terminating side.

By default, the **video** type is adopted.

Example

Specify the bearer capability type for the gateway to **audio**.

```
[XE-ls-gw-gw001] bearer-capability audio
```

1.1.3 bearer-capability (LS-OFFICEGROUP-OFFICE view)

Syntax

bearer-capability{ audio | video }

undo bearer-capability

View

LS-OFFICEGROUP-OFFICE view

Parameter

audio: Specifies audio type only.

video: Specifies video and audio types.

Description

Use the **bearer-capability** command to specify the bearer capability type for the office device, that is, to specify the service type (bearer capability type) supported in the Q.931 header of setup messages sent to the terminating side.

By default, the **video** type is adopted.

Example

Specify the bearer capability type for the office device to **audio**.

```
[XE-ls-og-og01 of01] bearer-capability audio
```

1.1.4 call-mode

Syntax

call-mode { **h323** | **sip** } { **redirect** | **routed** }

undo call-mode { **h323** | **sip** }

View

LS view

Parameter

h323: Sets the call mode to H.323.

sip: Sets the call mode to SIP.

redirect: Sets the call mode of LS to redirect.

routed: Sets the call mode of LS to routed.

Description

Use the **call-mode** command to set the call mode of LS.

Use the **undo call-mode** command to restore the default setting.

By default, routed mode is adopted for both H.323 and SIP.

Example

Set the LS to work in redirect mode.

```
[XE-ls] call-mode h323 redirect
[XE-ls] call-mode sip redirect
```

1.1.5 call-signal ip-address

Syntax

call-signal ip-address *ip-address*

undo call-signal ip-address

View

LS-GW view

Parameter

ip-address: Sets the IP address of call signaling.

ip-address: IP address.

Description

Use the **call-signal ip-address** command to configure the call signaling of the gateways registered with the LS.

Use the **undo call-signal ip-address** command to restore the default call signaling setting.

If the gateway does not support dynamic IP address report function or the administrator has disabled the function using the **dynamic-ip disable** command in LS-GW view, and

the gateway is in **normal** or **forever-up** status, you need to manually configure the call signaling address of the gateway on the XE IP PBX. Then during registration, the gateway reports its call signaling address to match the configured one.

By default, the IP address of call signaling is reported dynamically by the gateway.

Example

Set the call signaling IP address of the gateway gw001 to 169.254.10.1.

```
[XE-ls-gw-gw001] call-signal ip-address 169.254.10.1
```

1.1.6 call-signal port

Syntax

call-signal port *port*

undo call-signal port

View

LS-GW view

Parameter

port: Sets the port number of call signaling.

port: Port number, ranging from 1 to 65535.

Description

Use the **call-signal port** command to configure the call signaling of the gateways registered with the LS.

Use the **undo call-signal port** command to restore the default call signaling setting.

If the gateway does not support dynamic IP address report function or the administrator has disabled the function using the **dynamic-ip disable** command in LS-GW view, and the gateway is in **normal** or **forever-up** status, you need to manually configure the call signaling port number of the gateway on the XE IP PBX. Then during registration, the gateway reports its call signaling port number to match the configured one.

By default, the call signaling port number is reported dynamically by the gateway.

The **port** parameter is 1720 by default.

Example

Set the call signaling port number of the gateway gw001 to 2000.

```
[XE-ls-gw-gw001] call-signal port 2000
```

1.1.7 codec (LS-GW-PREFIX view)

Syntax

codec { **audio** { **g7231** | **g729** | **pcma** | **pcmu** } [**packet-length** *packet-length*] } | { **video** { **h261** | **h263** } } | { **data t38fax** }

undo codec { **audio** | **video | data** }

View

LS-GW-PREFIX view

Parameter

audio: Sets the audio codec type.

g7231: Sets the audio codec type as G.723.1.

g729: Sets the audio codec type as G.729.

pcma: Sets the audio codec type as G.711 A-law 64K.

pcmu: Sets the audio codec type as G.711 u-law 64K.

packet-length: Packetization time length that ranges from 1 to 18 in units of 10 ms.

video: Sets the video codec type.

h263: Sets the video codec type as H263.

h261: Sets the video codec type as H261.

data: Sets the data codec type.

t38fax: Sets T38 faxing support.

Description

Use the **codec** command to configure the codec type when the gatekeeper initiates capability negotiation with a gateway device. If a number is not configured with a codec type, the codec type configured for the gateway will be used instead.

Use the **undo codec** command to restore the default codec type.

By default, the codec type configured on the gateway is adopted.

Example

For subscriber 8801, set codec type to G.729 so that the gatekeeper uses it to initiate capability negotiation to a gateway device. Set the packetization time length as 40 ms and video codec type as H261.

```
[XE-ls-gw-gw000 8801]codec audio g729 packet-length 4
[XE-ls-gw-gw000 8801]codec video h261
```

1.1.8 codec (LS-GW-SUBSCRIBER view)

Syntax

codec { **audio** { **g7231** | **g729** | **pcma** | **pcmu** } [**packet-length** *packet-length*] } | { **video** { **h261** | **h263** } } | { **data t38fax** }

undo codec { **audio** | **video | data** }

View

LS-GW-SUBSCRIBER view

Parameter

audio: Sets the audio codec type.

g7231: Sets the audio codec type as G.723.1.

g729: Sets the audio codec type as G.729.

pcma: Sets the audio codec type as G.711 A-law 64K.

pcmu: Sets the audio codec type as G.711 u-law 64K.

packet-length: Packetization time length that ranges from 1 to 18 in units of 10 ms.

video: Sets the video codec type.

h263: Sets the video codec type as H263.

h261: Sets the video codec type as H261.

data: Sets the data codec type.

t38fax: Sets T38 faxing support.

Description

Use the **codec** command to configure the codec type used when the gatekeeper initiates capability negotiation to a gateway device. If a number is not configured with a codec type, the codec type configured for the gateway will be used instead.

Use the **undo codec** command to restore the default codec type.

By default, the codec type configured on the gateway is adopted.

Example

For subscriber 8801, set codec type to G.729 so that the gatekeeper uses to initiate capability negotiation to a gateway device. Set the packetization time length as 40 ms and video codec type as H261.

```
[XE-ls-gw-gw000 #1 8801]codec audio g729 packet-length 4
[XE-ls-gw-gw000 #1 8801]codec video h261
```

1.1.9 codec (LS-GW view)

Syntax

codec { **audio** { **g7231** | **g729** | **pcma** | **pcmu** } [**packet-length** *packet-length*] } | { **video** { **h261** | **h263** } } | { **data t38fax** }

undo codec { **audio** | **video** | **data** }

View

LS-GW view

Parameter

audio: Sets the audio codec type.

g7231: Sets the audio codec type as G.723.1.

g729: Sets the audio codec type as G.729.

pcma: Sets the audio codec type as G.711 A-law 64K.

pcmu: Sets the audio codec type as G.711 u-law 64K.

packet-length: Packetization time length that ranges from 1 to 18 in units of 10 ms.

video: Sets the video codec type.

h263: Sets the video codec type as H263.

h261: Sets the video codec type as H261.

data: Sets the data codec type.

t38fax: Sets T38 faxing support.

Description

Use the **codec** command to configure the codec type used when the gatekeeper initiates capability negotiation with a gateway device.

Use the **undo codec** command to restore the default codec type.

By default, G.729 is adopted for audio codec, the packetization time length is 30 ms, and video codec and data faxing is not supported.

Example

Set the codec type to G.729 so that the gatekeeper uses to initiate capability negotiation with a gateway device. Set, the packetization time length to 40 ms and video codec to H261.

```
[XE-ls-gw-gw000]codec audio g729 packet-length 4
[XE-ls-gw-gw000]codec video h261
```

1.1.10 codec (LS-OFFICEGROUP-OFFICE view)

Syntax

codec { **audio** { **g7231** | **g729** | **pcma** | **pcmu** } [**packet-length** *packet-length*] } | { **video** { **h261** | **h263** } } | { **data t38fax** }

undo codec { **audio** | **video | data** }

View

LS-OFFICEGROUP-OFFICE view

Parameter

audio: Sets the audio codec type.

g7231: Sets the audio codec type as G.723.1.

g729: Sets the audio codec type as G.729.

pcma: Sets the audio codec type as G.711 A-law 64K.

pcmu: Sets the audio codec type as G.711 u-law 64K.

packet-length: Packetization time length that ranges from 1 to 18 in units of 10 ms.

video: Sets the video codec type.

h263: Sets the video codec type as H263.

h261: Sets the video codec type as H261.

data: Sets the data codec type.

t38fax: Sets T38 faxing support.

Description

Use the **codec** command to configure the codec type used when the gatekeeper initiates capability negotiation to an office device.

Use the **undo codec** command to restore the default codec type.

By default, G.729 is adopted for audio codec, the packetization time length is 30 ms, and video codec and data faxing is not supported.

Example

Set the codec type to G.729 so that the gatekeeper uses to initiate capability negotiation to an office device to G.722. Set the packetization time length to 40 ms and video codec to H261.

```
[XE-ls-og-og01 off000]codec audio g729 packet-length 4
[XE-ls-og-og01 off000]codec video h261
```

1.1.11 codec (LS-OFFICEGROUP-PREFIX view)

Syntax

codec { **audio** { **g7231** | **g729** | **pcma** | **pcmu** } [**packet-length** *packet-length*] } | { **video** { **h261** | **h263** } } | { **data t38fax** }

undo codec { **audio** | **video** | **data** }

View

LS-OFFICEGROUP-PREFIX view

Parameter

audio: Sets the audio codec type.

g7231: Sets the audio codec type as G.723.1.

g729: Sets the audio codec type as G.729.

pcma: Sets the audio codec type as G.711 A-law 64K.

pcmu: Sets the audio codec type as G.711 u-law 64K.

packet-length: Packetization time length in 10 milliseconds, in the range of 1 to 18.

video: Sets the video codec type.

h263: Sets the video codec type as H263.

h261: Sets the video codec type as H261.

data: Sets the data codec type.

t38fax: Sets T38 faxing support.

Description

Use the **codec** command to configure the codec type used when the gatekeeper initiates capability negotiation to an office device.

Use the **undo codec** command to restore the default codec type.

By default, the codec type configured on the office device is adopted.

Example

For subscriber 8801, set codec type to G.729 so that the gatekeeper uses to initiate capability negotiation to an office device to G.729. Set the packetization time length to 40 ms and video codec to H261.

```
[XE-ls-og-og01 8801]codec audio g729 packet-length 4
[XE-ls-og-og01 8801]codec video h261
```

1.1.12 debugging location-server

Syntax

debugging location-server { call | heartbeat | register |all } level *level-number*

undo debugging location-server { call | heartbeat | register |all }

View

User view

Parameter

call: Enables call debugging.

heartbeat: Enables heartbeat, backup management and tunnel debugging.

register: Enables registration debugging.

all: Enables all debugging options.

level *level-number*: Sets the debugging level of LS, ranging from 0 to 7. Debugging is disabled when the level is 0.

Description

Use the **debugging location-server** command to set the debugging level of LS.

Use the **undo debugging location-server** command to restore the default setting.

The **call** keyword refers to information about calls; the **register** keyword indicates information about registration; the **heartbeat** keyword indicates information about heartbeat; the **all** keyword indicates all debugging levels including **call**, **register** and **heartbeat**.

All debugging options are disabled by default. When set to 4, debugging of level 1 to 4 is enabled; and 0 means to disable the debugging, by which you can hide the debugging information.

About the levels:

Level 0: Disable the debugging.

Level 1: DEBUG_LEVEL_EMERGENCY

Fail to allocate memory

Fail to allocate timer

Level 2: DEBUG_LEVEL_ALERT

Null pointer, invalid memory operation

Switching information about the state of the connection between process server (PS) and LS

Level 3: DEBUG_LEVEL_ERROR

Control block state incorrect/not matched

Invalid/unexpected control block index

Invalid/unexpected PID/Module ID

Fail to return value, the functions of the main function affected.

Invalid message type

Level 4: DEBUG_LEVEL_WARNING

Fail to return value, but the functions of the main function not affected.

Message head received

Abnormal timer timeout message

State transition message

Level 5: DEBUG_LEVEL_NOTIFICATION

Operating properly, but the environment slightly abnormal

Information about key service flow

Message header of the transmitted message

Level 6: DEBUG_LEVEL_INFORMATIONAL

Key processing flow of module/function

Memory allocating/releasing

Timeout message of normal timer

Important information of MD5 algorithm

Important information of Hash algorithm

Level 7: DEBUG_LEVEL_DEBUGGING

General flow information

Extraction/adding processing functions of optional IE

IE list information of message/message content

Calling instruction of function entry/instruction of returned value

Example

Enable all debugging options and set the debugging level of LS to 5.

```
<XE> debugging location-server all level 5
```

1.1.13 device-status (LS-GW view)

Syntax

device-status { **forever-up attachedps** *ps-id* | **normal** | **suspend** }

undo device-status

View

LS-GW view

Parameter

forever-up: Sets a gateway to work in forever-up state.

attachedps: Specifies the PS that this forever-up device belongs to.

ps-id: ID of the PS that this forever-up device belongs to.

normal: Sets a gateway to work in normal state.

suspend: Sets a gateway to work in suspend state.

Description

Use the **device-status** command to set the state of a gateway.

Use the **undo device-status** command to restore the default gateway state.

The device state defaults to **normal**.

Example

Set the device state of the gateway gw001 to forever-up and specify this gateway belong to the PS named **default-ps.**

```
[XE-ls-gw-gw001] device-status forever-up attachedps default-ps
```

1.1.14 device-status (LS-OFFICEGROUP-OFFICE view)

Syntax

device-status { **forever** | **normal** }

View

LS-OFFICEGROUP-OFFICE view

Parameter

forever: Sets the device status to forever-up.

normal: Sets the device status to normal.

Description

Use the **device-status** command to set the status of an office device.

By default, the status of an office device is forever.

Example

Set the device status to normal

```
[XE-ls-og-og01 of1]device-status normal
```

1.1.15 device-type (LS-GW view)

Syntax

device-type { **h323** | **sip** }

undo device-type

View

LS-GW view

Parameter

h323: Sets the gateway type to H.323.

sip: Sets the gateway type to SIP.

Description

Use the **device-type** command to specify the gateway type.

Use the **undo device-type** command to restore the default gateway type.

The type of a registered gateway defaults to SIP.

Example

Set the gateway type to H.323.

```
[XE-ls-gw-gw001] device-type h323
```

1.1.16 device-type (LS-OFFICEGROUP-OFFICE view)

Syntax

device-type { **h323-gk** | **h323-gw** | **sip** }

undo device-type

View

LS-OFFICEGROUP-OFFICE view

Parameter

h323-gk: Sets the office device to H.323 gatekeeper.

h323-gw: Sets the office device to H.323 gateway.

sip: Sets the office device to SIP-grade device.

Description

Use the **device-type** command to specify the device type of an office device.

Use the **undo device-type** command to restore the default office device type.

The type of an office device defaults to SIP-grade device.

Example

Set the office device of1 to H.323 gateway.

```
[XE-ls-og-og01 of1] device-type h323-gw
```

1.1.17 display debugging location-server

Syntax

display debugging location-server

View

Any view

Parameter

None

Description

Use the **display debugging location-server** command to display the debugging level of the LS.

Example

Display the debugging level of the LS.

```
<XE> display debugging location-server
 CALL           debugging level          3
 REGISTER       debugging level          3
 HEARTBEAT      debugging level          3
```

1.1.18 display location-server domain

Syntax

display location-server domain { *domain-id* | **all** }

View

Any view

Parameter

domain-id: ID of the domain whose information is to be displayed.

All: Displays information about all domains.

Description

Use the **display location-server domain** command to display the information about one domain or all domains on an LS.

Example

Display information about the PublicDomain domain.

```
[XE-ls] display location-server domain PublicDomain
-----------Domain Information -----------
 Domain Identifier:                    PublicDomain
 Domain Attribute:                     public
 process-server list:                  ps0
office-group list:
```

The result shows that the attribute of the PublicDomain domain is public and the PS belonging to it is ps0.

1.1.19 display location-server gateway

Syntax

display location-server gateway { *device-id* | **all** | **h323** | **sip** | **list** }

View

Any view

Parameter

all: Displays information about all gateways.

device-id: The identifier of the gateway to be displayed.

h323: Displays information about H.323 gateways.

sip: Displays information about SIP user agents.

list: Lists the identifiers and device types of the gateways.

Description

Use the **display location-server gateway** command to display information about the gateways registered with the LS.

Example

Display information about all gateways.

```
<XE> display location-server gateway all

------------ Gateway Information ------------
 Identifier:                    gw02
```

```
 LoadShare:                    Disable
 SubsLine:                     4
 PsGroupID:
----------Static Information:
 Device Type:                  SIP-UA
 Ip-address:                   0.0.0.0:5060
 Call Ip-address:              0.0.0.0:1720
 Device Status:                normal
 Device Manufacturer:          H3C
 Transport:                    udp
 Multiplex:                    disable
 DynamicIp:                    disable
 Subscriber count:             1
 Subscriber List:
                #2 1002
 Static Alias Number:          0
 Device Priority:              10
 Registration Circle:          180 sec
 Authentication:               disable
 Password:                     GATEWAY
 Area Code Substitute:         enable
 Nation Code:
 Region Code:
----------Dynamic Information:
 Registration Status:          offline
 Registration Transport:       auto
 Dynamic Alias Number:          0
 Dynamic Alias Check Sum:      0
 Resource Can Use:             Yes
 Registration Call Identifier:
 RM handle:                    ffffffff
 CAI handle:                   ffffffff
 Notification Bitmap: Confirm:   1 Reject:   1 Blankout:   1 Challenge:   0
 Indication Bitmap:   Confirm:   0 Reject:   0 Blankout:   0 Challenge:   0
 Attached Process Server:
```

Table 1-1 Description on the fields of the **display location-server gateway all** command

Field	Description
Identifier	Identifier of the gateway
LoadShare	Load sharing state

Field	Description
SubsLine	Capacity of voice subscriber lines
PsGroupID	Identifier of the PS group to which the gateway belongs
Device Type	Type of the gateway
Ip-address	IP address of the gateway
Call Ip-address	IP address of call signaling
Device Status	State of the gateway
Device Manufacturer	Information about the manufacturer
Transport	Transport mode of the gateway
Multiplex	Multiplexing mode
DynamicIp	Whether to enable dynamic IP
Subscriber count	Number of entries for subscriber line numbers
Subscriber List	List of entries for subscriber line numbers
# #2 1002	Short number and long number
Static Alias Number	Number of static number routes
Static Alias List	Routing table of static number
Device Priority	Device priority
Registration Circle	Registration circle
Authentication	Authentication mode
Password	Authentication password
Area Code Substitute	State of the location-based number substitute
Nation Code	Country code
Region Code	Area code
Registration Status	Registration status
Registration Transport	Registration transport mode
Dynamic Alias Number	Number of dynamic number routes
Dynamic Alias Check Sum	Check sum of dynamic number routes
Resource Can Use	Whether the gateway resource is available
Registration Call Identifier	Registration call identifier
RM handle	Registration module handle
CAI handle	CAI module handle
Notification Bitmap	Notification bitmap

Field	Description
Indication Bitmap	Indication bitmap
Attached Process Server	Attached PS (the gateway registers with the LS through this PS)

1.1.20 display location-server office-group

Syntax

display location-server office-group { **all** | *officegroup-id* | **list** }

View

Any view

Parameter

all: Displays all office group information.

officegroup-id: Identifier of the office group to be displayed.

list: Displays office group information in a list.

Description

Use the **display location-server office-group** command to display information about office devices configured on the LS.

Example

Display information about all office groups.

```
[XE-ls-og-og01 off000]display location-serve office-group all

-------------- Office-group Information --------------
 Identifier:                    og01
 Nation Code:
 Region Code:
 Area Code Substitute:          disable
 Attached Domain Identifier:    default-domain
 Static Alias Number:           1
 Static Alias List:
  #
  prefix 1...
 Office Number:         1
 Office List:
  #
  office off000
```

```
   acct enable
[XE-ls-og-og01 off000]
```

Table 1-2 Description on the fields of the **display location-server office-group all** command

Field	Description
Identifier	Identifier of the office group
Nation Code	Country code
Region Code	Area code
Area Code Substitute	State (enabled/disabled) of the location-based number substitute function
Attached Domain Identifier	Domain that the office group belongs to
Static Alias Number	Number of static number routes
Static Alias List	Static route number list
Office Number	Number of office devices
Office List	Office device list

1.1.21 display location-server process-server

Syntax

display location-server process-server { **all** | *device-id* | **list** }

View

Any view

Parameter

all: Display information of all PSs registered with the LS.

device-id: The identifier of the PS to be displayed.

list: Lists the identifiers and IP addresses of the PSs.

Description

Use the **display location-server process-server** command to display information about the PSs registered with the LS.

Example

Display information about the PS ps0.

```
[XE]display location-server process-server ps0

---------- Process Server Information ----------
 Identifier:                    ps0
 RelativeCapability:            1
 Attached SubsLineNumber:       4
----------Static Information:
 SIP port:                      5060
 RAS port:                      1719
 Process Server Group Identifier:
 Attached Domain Identifier:    default-domain
 Tunnel function:               Disable
 HeartBeat Key:                 XEngine
 Transport:                     auto
----------Dynamic Information:
 Ip-address:                    172.31.3.24
 Status:                        Authorized
 Attaching Gateway List:
```

Table 1-3 Description on the fields of the **display location-server process-server** command

Field	Description
Identifier	Identifier of the PS
RelativeCapability	Relative capability of the PS
Attached SubsLineNumber	Number of the subscriber line the PS supports
SIP port	SIP port of the PS
RAS port	RAS port of the PSs
Process Server Group Identifier	Group identifier of the PS
Attached Domain Identifier	The domain the PS belongs to
Tunnel function	Whether the tunnel function is enabled
HeartBeat Key	Heartbeat key of the PS and LS
Transport	Transport method of the PS
Ip-address	IP address of the PS
Status	Status of the PS
Attaching Gateway List	List of gateways registered with a PS

Display the identifier and IP address of the PS.

```
[XE-ls] display location-server process-server list
 Identifier                      IP address
-------------------------------------------------
 gkserver                        192.168.80.50:13580
```

1.1.22 display location-server statistics

Syntax

display location-server statistics

View

Any view

Parameter

None

Description

Use the **display location-server statistics** command to display statistics of the LS.

Example

Display statistics of the LS.

```
<XE> display location-server statistics
CAI Message Statistics of LS:
   CAI Message                      total  rcv send  err dupr dups disc
-----------------------------------------------------------------------
            Register Query Device:     0    0    0    0    0    0    0
         Register Response Device:     0    0    0    0    0    0    0
          Register Notify Confirm:     0    0    0    0    0    0    0
           Register Notify Reject:     0    0    0    0    0    0    0
        Register Notify Challenge:     0    0    0    0    0    0    0
Register Indication Device Status:     0    0    0    0    0    0    0
         Register Notify BlankOut:     0    0    0    0    0    0    0
Register Indication Device Update:     0    0    0    0    0    0    0
       Call Query Number Analysis:     0    0    0    0    0    0    0
    Call Response Number Analysis:     0    0    0    0    0    0    0
             Call Notify Ring Back:     0    0    0    0    0    0    0
              Call Notify Redirect:     0    0    0    0    0    0    0
              Call Notify Off Hook:     0    0    0    0    0    0    0
                  Call Notify Talk:     0    0    0    0    0    0    0
               Call Notify Release:     0    0    0    0    0    0    0
     Call Notify Release Complete:     0    0    0    0    0    0    0
             Call Indication Refer:     0    0    0    0    0    0    0
```

```
          Call Indication Release:     0    0    0    0    0    0    0
     Call Indication Call Forward:     0    0    0    0    0    0    0
         Connect Notify HeartBeat:     0    0    0    0    0    0    0
     Connect Indication HeartBeat:     0    0    0    0    0    0    0
             Call Query Admission:     0    0    0    0    0    0    0
          Call Response Admission:     0    0    0    0    0    0    0
     Call Notify BandWidth Change:     0    0    0    0    0    0    0
 Call Indication BandWidth Change:     0    0    0    0    0    0    0
                      Invalid CAI:     0    0    0    0    0    0    0

 CAI Distribute Message Statistics of LS:
 CAI Distribute Message              total  rcv send  err dupr dups disc
-------------------------------------------------------------------------
CAI Distribute Message between PS and RM: 0    0    0    0    0    0    0
CAI Distribute Message between PS and CM: 0    0    0    0    0    0    0
            CAI Distribute Message of LS: 0    0    0    0    0    0    0
                             CAI Release: 0    0    0    0    0    0    0
                          CAI Invalid ID: 0    0    0    0    0    0    0
```

Table 1-4 Description on the fields of the **display location-server statistics** command

Field	Description
Register Query Device	Query device information
Register Response Device	The LS returns the information of the queried device
Register Notify Confirm	Notify the LS of successful registration
Register Notify Reject	Notify the LS of failed registration
Register Notify Challenge	Notify LS to send Challenge message
Register Indication DeviceStatus	The LS prompts the registration status (success, failure or redirect)
Register Notify BlankOut	Notify the LS of expired registration
Register Indication DeviceUpdate	The LS prompts the update of the device configuration
Call Query NumberAnalysis	The PS queries the LS about number analysis
Call Response NumberAnalysis	The LS returns the result of number analysis
Call Notify RingBack	The PS notifies the subscriber to ring back
Call Notify Redirect	The PS notifies the LS to redirect the call
Call Notify OffHook	The PS notifies that the called has picked up the phone

Field	Description
Call Notify Talk	The PS notifies that the subscriber is on the call
Call Notify Release	Notify that the LS is ready to release the call
Call Notify ReleaseComplete	Notify that the call release completes
Call Indication Refer	Information of the calling and called parties
Call Indication Release	Indicate the PS to terminate the call
Call Indication CallForward	Indicate call forwarding
Connect Notify HeartBeat	The PS sends periodical heartbeat message to the LS
Connect Indication HeartBeat	The LS sends periodical heartbeat message to the PS.
Call Query Admission	Admission of the called party
Call Response Admission	Response to the admission of the called party
Call Notify BandWidth Change	Notification of the bandwidth change request
Call Indication BandWidth Change	Indication of the bandwidth change request

1.1.23 display location-server tunnelpeer

Syntax

display location-server tunnelpeer { *tunnelpeer-id* | **all** }

View

Any view

Parameter

tunnelpeer-id: ID of the tunnel end pair whose information is to be displayed.

All: Displays information about all tunnel end pairs.

Description

Use the **display location-server tunnelpeer** command to display the information about one or all tunnel end pairs (that is, one or all pairs of PSs) on an LS.

Example

Display the information about all tunnel end pairs.

```
[XE-ls] display location-server tunnelpeer all
-------****------ TunnelPeer Information -------****------
```

```
 Tunnelpeer Identifier:                tunnel01
 current state:                        initial

***Private Domain Process Server Information***
 belongto domain:                      PrivateDomain
 map to firewall IP:                   1.1.1.2
 map to firewall port:                 9600

***Public Domain Process Server Information***
 belongto domain:                      PublicDomain
 map to firewall IP:                   192.168.1.22
 map to firewall port:                 9600
```

Table 1-5 Description on the fields of the **display location-server tunnelpeer** command

Field	Description
Tunnelpeer Identifier	ID of the tunnel end pair.
current state	The status of the tunnel end pair.
Private Domain Process Server Information	
belongto domain	The domain that the private network PS of this tunnel end pair belongs to.
map to firewall IP	The destination IP address that the public network PS uses to send IP packets to the private network PS. Usually it is the public IP address on the firewall that corresponds to the private network PS.
map to firewall port	The destination port that the public network PS uses to send IP packets to the private network PS.
Public Domain Process Server Information	
belongto domain	The domain that the public network PS of this tunnel end pair belongs to.
map to firewall IP	The destination IP address that the private network PS uses to send IP packets to the public network PS.
map to firewall port	The destination port that the private network PS uses to send IP packets to the public network PS.

1.1.24 dynamic-ip

Syntax

dynamic-ip { **disable** | **enable** }

undo dynamic-ip

View

LS-GW view

Parameter

enable: Enables the dynamic update of the gateway's IP address.

disable: Disables the dynamic update of the gateway's IP address.

Description

Use the **dynamic-ip** command to enable or disable the dynamic update of the gateway's IP address.

Use the **undo dynamic-ip** command to restore the default setting.

By default, the dynamic update of the gateway's IP address is disabled.

Note:

- If you use the **manufacturer** command to set the manufacturer of the gateway to **other**, the system will disable the dynamic update of the gateway's IP address.
- After enabling the dynamic update of the gateway's IP address with the **dynamic-ip** command, you cannot use the **manufacturer** command to change the manufacturer setting of the gateway; in addition, the **ip**, **port**, **call-signal ip**, and **call-signal port** commands become invalid.

Example

Enable the dynamic update of the gateway's IP address.

```
[XE-ls-gw-gw001] dynamic-ip enable
```

1.1.25 gateway (LS view)

Syntax

gateway *device-id*

undo gateway { *device-id* | **all** }

View

LS view

Parameter

device-id: The identifier of the gateway. It is case sensitive.

all: Deletes all gateways.

Description

Use the **gateway** command to add a gateway or enter the device view of a gateway.

Use the **undo gateway** command to remove one or all gateways.

Example

Add a gateway named gw001.

```
[XE-ls] gateway gw001
[XE-ls-gw-gw001]
```

1.1.26 heartbeat password (LS-PS view)

Syntax

heartbeat password *password*

undo heartbeat password

View

LS-PS view

Parameter

password: Heartbeat password that consists of 1 to 16 characters and is case-sensitive.

Description

Use the **heartbeat password** command to set the heartbeat password for a PS registered with the LS.

Use the **undo heartbeat password** command to restore the default password.

By default, the password is XEngine.

Example

Set the heartbeat password for the PS ps0 to pass1.

```
[XE-ls-ps-ps0] heartbeat password pass1
```

1.1.27 heartbeat-time-range

Syntax

heartbeat-time-range *time*

undo heartbeat-time-range

View

LS view

Parameter

time: Allowed time difference between the LS and the PS/MS, in the range of 0 to 36000 seconds.

Description

Use the **heartbeat-time-range** command to set the allowed time difference between the LS and the PS/MS.

Use the **undo heartbeat-time-range** command to restore the default value.

By default, this value is 0, indicating the time difference is not limited.

Example

Set the allowed time difference between the LS and the PS/MS to 3600 seconds.

```
[XE-ls] heartbeat-time-range 3600
```

1.1.28 ip-address (LS-GW view)

Syntax

ip-address *ip-address*

undo ip-address

View

LS-GW view

Parameter

ip-address: IP address.

Description

Use the **ip-address** command to set the IP address of a gateway registered with the LS.

Use the **undo ip-address** command to restore the default IP address.

By default, the IP address is 0.0.0.0.

Example

Set the IP address of the gateway gw001 to 192.168.1.33.

```
[XE-ls-og-og01 of1] ip-address 192.168.1.33
```

1.1.29 ip-address (LS-OFFICEGROUP-OFFICE view)

Syntax

ip-address *ip-address*

undo ip-address

View

LS-OFFICEGROUP-OFFICE view

Parameter

ip-address: IP address.

Description

Use the **ip-address** command to set the IP address of an office device.

Use the **undo ip-address** command to restore the default IP address.

By default, the IP address is 0.0.0.0.

Example

Set the IP address of the office device of1 to 192.168.1.33.

```
[XE-ls-office-of1] ip-address 192.168.1.33
```

1.1.30 ls-config

Syntax

ls-config interface *interface-type slot-number* [**port** *port*]

undo ls-config

View

LS view

Parameter

interface: Specifies the interface.

interface-type: Interface type.

slot-number: Interface number.

port: Specifies the port number, which ranges from 1 to 65535.

Description

Use the **ls-config** command to specify the interface and port number of the LS.

Use the **undo ls-config** command to restore the default interface and port number.

By default, the port number is 13579, the interface is Ethernet 0/0 for XE 200 IP PBX and GigabitEthernet 0/0 for XE 2000 IP PBX.

Example

Specify the interface and port number of the LS.

```
[XE200-ls] ls-config interface ethernet 0/0 port 12345
```

1.1.31 manufacturer

Syntax

manufacturer { **other** | **h3c** }

undo manufacturer

View

LS-GW view

Parameter

other: Sets the manufacturer of a gateway to other.

h3c: Sets the manufacturer of a gateway to H3C.

Description

Use the **manufacturer** command to set the manufacturer for a gateway registered with the LS.

Use the **undo manufacturer** command to restore the default manufacturer.

By default, the manufacturer is **h3c**.

🕮 **Note:**

- If you use the **manufacturer** command to set the manufacturer of the gateway to **other**, the system will disable the dynamic update of the gateway's IP address.
- If you use the **dynamic-ip** command to enable the dynamic update of the gateway's IP address, you cannot use the **manufacturer** command to change the manufacturer setting of the gateway.

Example

Set the manufacturer of the gateway gw001 to other.

```
[XE-ls-gw-gw001] manufacturer other
```

1.1.32 multiplex (LS-GW view)

Syntax

multiplex { **disable** | **enable** }

undo multiplex

View

LS-GW view

Parameter

disable: Disables multiplexing.

enable: Enables multiplexing.

Description

Use the **multiplex** command to specify the multiplexing mode of a gateway registered with the LS.

By default, multiplexing is disabled.

Example

Enable multiplexing on the gateway gw001.

```
[XE-ls-gw-gw001] multiplex enable
```

1.1.33 multiplex (LS-OFFICEGROUP-OFFICE view)

Syntax

multiplex { **disable** | **enable** }

undo multiplex

View

LS-OFFICEGROUP-OFFICE view

Parameter

disable: Disables multiplexing.

enable: Enables multiplexing.

Description

Use the **multiplex** command to specify the multiplexing mode of an office device configured on the LS.

By default, multiplexing is disabled.

Example

Enable multiplexing on the office device of1.

```
[XE-ls-og-og01 of1] multiplex enable
```

1.1.34 multiplex (LS-PS view)

Syntax

multiplex { **disable** | **enable** }

undo multiplex

View

LS-PS view

Parameter

disable: Disables multiplexing.

enable: Enables multiplexing.

Description

Use the **multiplex** command to specify the multiplexing mode of a PS registered with the LS.

By default, multiplexing is disabled.

Example

Enable multiplexing on the PS ps0.

```
[XE-ls-ps-ps0] multiplex enable
```

1.1.35 office

Syntax

office *device-id*

undo office { *device-id* | **all** }

View

LS-OFFICEGROUP view

Parameter

device-id: The identifier of the office device. It is case sensitive.

all: Deletes all offices.

Description

If the office mapping *device-id* does not exist, use the **office** command to create a new office on the LS and enter the LS-OFFICEGROUP-OFFICE view.

If the office mapping *device-id* exists, use the **office** command to enter the LS-OFFICEGROUP-OFFICE view directly.

Use the **undo office** command to delete the office.

You need to enter the LS-OFFICE view first to configure an office.

Example

Enter the view of the office of1.

```
[XE-ls-og-og01] office of1
[XE-ls-og-og01 of1]
```

1.1.36 office-group

Syntax

office-group *office-group-id*

undo office-group { *office-group-id* | **all** }

View

LS view

Parameter

office-group-id: Office group ID. It is case sensitive.

all: Deletes all office groups configured on the LS.

Description

Use the **office-group** command to create an office group and enter its LS-OFFICEGROUP view, or directly enter the LS-OFFICEGROUP view if an office group with the specified name exists.

Use the **undo office-group** command to delete the specified or all office groups.

Example

Create an office group og01 and then enter its LS-OFFICEGROUP view.

```
[XE2000-ls]office-group og01
```

```
[XE2000-ls-og-og01]
```

1.1.37 otapc

Syntax

otapc

undo otapc { **fxs** | **relay** }

View

Prefix view

Parameter

fxs: Specifies the static route number to be the subscriber number.

relay: Specifies the static route number to be the relay number.

Description

Use the **otapc** command to configure the attribute of a static route number of a gateway.

Use the **undo otapc** command to restore the default attribute of a static route number.

By default, the static route number is the subscriber number.

Example

Configure the static router number 9 to be the relay number on gateway gw01.

```
[XE-ls] gateway gw02
[XE-ls-gw-gw02] prefix 9...
[XE-ls-gw-gw02 9...] otapc relay
```

1.1.38 password (LS-GW view)

Syntax

password *password*

undo password

View

LS-GW view

Parameter

password: Authentication password consisting of 1 to 16 characters.

Description

Use the **password** command to set the authentication password for a gateway registered with the LS.

Use the **undo password** command to restore the default password.

By default, the authentication password for a gateway is GATEWAY.

Example

Set the authentication password of the gateway gw001 to pass1.

```
[XE-ls-gw-gw001] password pass1
```

1.1.39 policy random selection

Syntax

policy random-selection { **enable** | **disable** }

View

LS view

Parameter

random-selection: Configures random selection of numbers.

enable: Enables random selection.

disable: Disables random selection.

Description

Use the **policy random-selection enable** command to enable random selection.

Use the **policy random-selection disable** command to disable random selection.

By default, the random selection is enabled.

Example

Disable random selection.

```
[XE-LS] policy random-selection disable
```

1.1.40 policy select-rule

Syntax

policy select-rule {number-first | priority-first}

undo policy select-rule

View

LS view

Parameter

number-first: Configures the longest number at a higher priority.

priority-first: Configures the priority number at a higher priority.

Description

Use the **policy select-rule** command to configure the longest number or the priority number at a higher priority.

Use the **undo policy select-rule** command to restore the default call-matching criterion.

By default, the call-matching criterion sets the priority number at a higher priority.

Example

Configure the longest number at a higher priority.

[XE-ls] policy select-rule number-first

[XE-ls]

1.1.41 policy unknown-device-admission

Syntax

policy unknown-device-admission {enable | disable}

undo policy unknown-device-admission

View

LS view

Parameter

Enable: Enables the XE IP PBX to accept requests from unknown devices.

Disable: Disables the XE IP PBX to accept requests from unknown devices.

Description

Use the **policy unknown-device-admission** command to enable or disable to accept requests for unknown devices.

Use the **undo policy unknown-device-admission** command to restore the default.

By default, accepting requests from unknown devices is enabled.

Example

Disable to accept requests from unknown devices.

```
[XE-ls]policy unknown-device-admission disable
[XE-ls]
```

1.1.42 port (LS-GW view)

Syntax

port *port*

undo *port*

View

LS-GW view

Parameter

port: Port number, ranging from 1 to 65535. By default, it is 5060.

Description

Use the **port** command to set the port number of a gateway registered with the LS.

Use the **undo port** command to restore the default port.

By default:

For an H.323 device, port 1719 is used;

For a SIP device (User-Agent), port 5060 is used.

Example

Set the port number of the gateway gw001 to 1234.

```
[XE-ls-gw-gw001] port 1234
```

1.1.43 port (LS-OFFICEGROUP-OFFICE view)

Syntax

port *port*

undo port

View

LS-OFFICEGROUP-OFFICE view

Parameter

port: Port number, ranging from 1 to 65535. By default, it is 5060.

Description

Use the **port** command to set the port number of an office device configured on the LS.

Use the **undo port** command to restore the default port.

By default, the port number of an office device is 5060.

Note:

By default, the port number is 5060. When the **dynamic-ip disable** command is used and the type of the gateway is SIP, you can keep this number unchanged; while if the type is h323-gw, you should use the **port** command to set the port number to 1720, and if the type is h323-gk, you should use the **port** command to set the port number to 1719.

Example

Set office device of1 using port 1720.

```
[XE-ls-og-og01 of1] port 1720
```

1.1.44 prefix (LS-GW view)

Syntax

prefix *number*

undo prefix { *number* | **all** }

View

LS-GW view

Parameter

number: Static route number consisting of 1 to 31 characters, which can be numbers from 0 to 9, letters A, B, C, D or signs * and #.

all: Deletes all route numbers.

Description

Use the **prefix** command to configure a static route number for a gateway registered with the LS and enter the view of this number.

Use the **undo prefix** command to delete one or all of the static route numbers of a gateway.

Example

Configure the static route number 8801 for the gateway gw01.

```
[XE-ls-gw-gw01]prefix 8801
[XE-ls-gw-gw01 8801]
```

1.1.45 prefix (LS-OFFICEGROUP view)

Syntax

prefix *number*

undo prefix { *number* | **all** }

View

LS-OFFICEGROUP view

Parameter

number: Static route number consisting of 1 to 31 characters, which can be numbers from 0 to 9, letters A, B, C, D or signs * and #.

all: Deletes all route numbers.

Description

Use the **prefix** command to configure a static route number for an office device configured on the LS and enter the view of this number.

Use the **undo prefix** command to delete one or all of the static route numbers of an office group.

Example

Configure the static route number 8803 for office group og01.

```
[XE2000-ls-og-og01] prefix 8803
[XE2000-ls-og-og01 8803]
```

1.1.46 priority (LS-GW view)

Syntax

priority *level*

undo priority

View

LS-GW view

Parameter

level: Priority of a gateway, which ranges from 0 to 1000 and defaults to 10. The larger the value, the higher the priority.

Description

Use the **priority** command to set the priority of a gateway registered with the LS.

Use the **undo priority** command to restore the default priority.

The default priority is 10.

Example

Set the priority of the gateway gw001 to 11.

```
[XE-ls-gw-gw001] priority 11
```

1.1.47 priority (LS-OFFICEGROUP-OFFICE view)

Syntax

priority *priority-level*

undo priority

View

LS-OFFICEGROUP-OFFICE view

Parameter

level: Priority of an office device, which ranges from 0 to 1000 and defaults to 10. The larger the value, the higher the priority.

Description

Use the **priority** command to set the priority of an office device configured on the LS.

Use the **undo priority** command to restore the default priority.

The default priority is 10.

Example

Set the priority of the office device of1 to 11.

```
[XE-ls-og-og01 of1] priority 11
```

1.1.48 priority (prefix view)

Syntax

priority *priority-level*

undo priority

View

Prefix view

Parameter

level: Priority of a static route number, which ranges from 0 to 1000, and the default is the same as that of a gateway.

Description

Use the **priority** command to set the priority of a static route number registered with the LS.

Use the **undo priority** command to restore the default priority.

The default priority of a static route number is the same as that of a gateway or an office device, refer to priority (LS-GW view) for details.

Example

Set the priority of the static route number 1101 to 11.

```
[XE-ls-gw-gw01] prefix 1101
[XE-ls-gw-gw01 1101] priority 11
```

1.1.49 priority (subscriber view)

Syntax

priority *priority-level*

undo priority

View

Subscriber view

Parameter

level: Priority of a voice subscriber line number entry, which ranges from 0 to 1000, and the default is the same as that of a gateway.

Description

Use the **priority** command to set the priority of a voice subscriber line number entry registered with the LS.

Use the **undo priority** command to restore the default priority.

The default priority of a voice subscriber line number is the same as that of a gateway, refer to priority (LS-GW view) for details.

Example

Set the priority of the voice subscriber line number entry #01 9901 to 11.

```
[XE-ls-gw-gw01] subscriber #01 9901
[XE-ls-gw-gw01 #01 9901] priority 11
```

1.1.50 process-server

Syntax

process-server *device-id*

undo process-server { *device-id* | **all** }

View

LS view

Parameter

device-id: The identifier of a PS. It is case sensitive.

all: Deletes all PSs.

Description

Use the **process-server** command to add a PS and enter the LS-PS view of the LS. If this PS exists, this command brings you into the LS-PS view of the LS.

Use the **undo process-server** command to delete the PSs registered with the LS.

Before deleting a PS to which a permanently online gateway connects, you need to change the status of the gateway.

You need to enter LS-PS view first before configuring the PS.

Example

Enter the view of the PS ps0.

```
[XE-ls] process-server ps0
[XE-ls-ps-ps0]
```

1.1.51 reset location-server statistics

Syntax

reset location-server statistics

View

User view

Parameter

None

Description

Use the **reset location-server statistics** command to clear the statistics about the LS, that is, to clear the information displayed by the **display location-server statistics** command.

Example

Clear the statistics about the LS.

```
<XE> reset location-server statistics
```

1.1.52 start

Syntax

start

View

LS view

Parameter

None

Description

Use the **start** command to start the LS.

The LS is not started by default.

Example

Start the LS.

```
[XE-ls] start
```

1.1.53 stop

Syntax

stop

View

LS view

Parameter

None

Description

Use the **stop** command to disable the LS.

Example

Disable the LS.

```
[XE-ls] stop
```

1.1.54 subscriber

Syntax

subscriber *short-number long-number*

undo subscriber { *short-number long-number* | **all** }

View

LS-GW view

Parameter

short-number: Short number of a voice subscriber line number entry corresponding to a long number, which starts with a "#" and consists of two to three characters (including the "#"). The value of this number ranges from 0 to 31.

long-number: Long number, corresponding to the short number of the voice subscriber line number, which contains one to 31 digits. The long number can be numbers from 0 to 9, signs *, #, and letters A, B, C, or D.

all: Deletes all voice subscriber line number entry.

Description

Use the **subscriber** command to create a number entry for a voice subscriber line of a gateway registered with the LS.

Use the **undo subscriber** command to delete all subscriber line number entries of the gateway.

Example

Create a number entry for a voice subscriber line of the gateway gw001, with #31 as the short number and 68835641 as the long number.

```
[XE-ls-gw-gw001] subscriber #31 68835641
[XE-ls-gw-gw01 #31 68835641]
```

Create a number entry for a voice subscriber line of the subscriber whose long number is 68835641, with #11 as the short number.

```
[XE-ls-gw-gw01 #31 68835641] quit
[XE-ls-gw-gw01]subscriber #11 68835641
```

```
[XE-ls-gw-gw01 #11 68835641]
```

1.1.55 transport (LS-GW view)

Syntax

transport { **auto** | **tcp** | **udp** }

undo transport

View

LS-GW view

Parameter

auto: Specifies to select transport mode automatically.

tcp: Specifies to transport using TCP.

udp: Specifies to transport using UDP.

Description

Use the **transport** command to specify the transport mode of a gateway registered with the LS.

Use the **undo transport** command to restore the default transport mode.

By default, **udp** mode is selected.

Example

Specify the gateway gw001 to transport using TCP.

```
[XE-ls-gw-gw001] transport tcp
```

1.1.56 transport (LS-OFFICEGROUP-OFFICE view)

Syntax

transport { **auto** | **tcp** | **udp** }

undo transport

View

LS-OFFICEGROUP-OFFICE view

Parameter

auto: Specifies to select transport mode automatically.

tcp: Specifies to transport using TCP.

udp: Specifies to transport using UDP.

Description

Use the **transport** command to specify the transport mode of an office device configured on the LS.

Use the **undo transport** command to restore the default transport mode.

By default, **auto** mode is selected.

Example

Specify the office device of1 to transport using UDP.

```
[XE-ls-og-og01 of1] transport tcp
```

1.1.57 ttl

Syntax

ttl *time-length*

undo ttl

View

LS-GW view

Parameter

time-length: TTL time length in seconds, ranging from 10 to 65535. It defaults to 180 seconds.

Description

Use the **ttl** command to set the time-to-live value of the registration information of a gateway registered with the LS.

Use the **undo ttl** command to restore the default value.

Example

Set the time-to-live value of the registration information of the gateway gw001 to 200 seconds.

```
[XE-ls-gw-gw001] ttl 200
```

Chapter 2 NAT/FW Tunnel Traversal Configuration Commands

2.1 NAT/FW Tunnel Traversal Configuration Commands

2.1.1 attribute

Syntax

attribute {**private** | **public**}

undo attribute

View

LS-domain view

Parameter

private: Specifies that the domain belongs to a private network.

public: Specifies that the domain belongs to a public network.

Description

Use the **attribute** command to configure the attribute of a domain to specify the type (public network or private network) of the domain.

Use the **undo attribute** command to cancel the attribute configuration of the domain.

Example

Specify that domain001 belongs to a private network.

```
[XE-ls-domain-domain001] attribute private
```

2.1.2 belongto

Syntax

belongto *domain-id*

undo belongto

View

LS-OFFICEGROUP view

LS-office view

Parameter

domain-id: ID of the domain to which the PS or office group is to belong.

Description

Use the **belongto** command to specify the domain to which the PS or office group is to belong.

Use the **undo belongto** command to specify that the PS or office group belongs to the default-domain domain.

By default, a PS or an office group belongs to the default-domain domain.

Example

Specify that ps0 belongs to domain001.

```
[XE-ls-ps-ps0] belongto domain001
```

2.1.3 device-status forever-up attachedps

Syntax

device-status forever-up attachedps *ps-id*

View

LS-GW view

Parameter

ps-id: ID of the PS to which the gateway device is to belong.

Description

Use the **device-status forever-up attachedps** *ps-id* command to specify the PS to which a forever-up gateway device is to belong.

Example

Specify that gw01, a forever-up gateway device, belongs to ps01.

```
[XE-ls-gw-gw01] device-status forever-up attachedps ps01
```

2.1.4 domain

Syntax

domain *domain-id*

undo domain { *domain-id* | **all** } [**no-confirm**]

View

LS view

Parameter

domain-id: ID of the domain to be created, deleted , or ID of the domain whose view you want to enter. It is case sensitive.

all: Removes all domains.

no-confirm: Removes a domain without user confirmation.

Description

Use the **domain** command to create a domain (if the domain identified by the *domain-id* argument does not exist.) or enter the corresponding domain view (if the domain identified by the *domain-id* argument already exists).

Use the **undo domain** command to remove a specified domain or all domains as well as the office devices belonging to the domain.

Example

Create a domain with an ID of domain001.

```
[XE-ls] domain domain001
```

Delete a domain.

```
[XE-ls] undo domain domain001
NOTICE:This command will delete all offices belonged to the domain!
Continue?[Y/N]:y
Delete Domain domain001
```

Delete a domain directly without user confirmation.

```
[XE-ls]undo domain domain002 no-confirm
Delete Domain domain002
[XE-ls]
```

2.1.5 nat&fw

Syntax

nat&fw

View

LS view

Parameter

None

Description

Use the **nat&fw** command to enter LS-NAT&FW view.

Example

Enter LS-NAT&FW view.

```
[XE-ls] nat&fw
```

2.1.6 tunnel

Syntax

tunnel { **enable** | **disable** }

undo tunnel

View

LS-PS view

Parameter

enable: Enables NAT/FW tunnel traversal on current PS.

disable: Disables NAT/FW tunnel traversal on current PS.

Description

Use the **tunnel** command to enable/disable NAT/FW (firewall) tunnel traversal on current PS.

By default, NAT/FW tunnel traversal is disabled on a PS.

Example

Enable NAT/FW tunnel traversal on PS0.

```
[XE-ls-ps-ps0] tunnel enable
```

2.1.7 tunnelpeer

Syntax

tunnelpeer *tunnelpeer-id* **private** *private-ps-id private-to-public-add* **port** *private-to-public-port* **public** *public-ps-id public-to-private-add* **port** *public-to-private-port*

undo tunnelpeer { *tunnelpeer-id* | **all** }

View

LS-NAT&FW view

Parameter

tunnelpeer-id: ID of the tunnel end pair to be created.

private-ps-id: ID of the specified PS in the private network.

private-to-public-add: Destination address of the IP packets sourced from the PS in the private network and destined for the PS in the public network.

private-to-public-port: Destination port number of the IP packets sourced from the PS in the private network and destined for the PS in the public network.

public-ps-id: ID of the specified PS in the public network.

public-to-private-add: Destination address of the IP packets sourced from the PS in the public network and destined for the PS in the private network. Normally, it is the public network IP address that the PS in the private network is mapped to on the NAT/FW.

public-to-private-port: Destination port number of the IP packets sourced from the PS in the public network and destined for the PS in the private network. Normally, it is the port number of the firewall used by the PS in the private network.

Description

Use the **tunnelpeer** command to configure a tunnel end pair (that is, a pair of PSs, with one in the private network and another in the public network, which will communicate with each other across the firewall).

Use the **undo tunnelpeer** command to delete all tunnel end pairs or a specified tunnel end pair.

Example

PS0 resides in the private network and its IP address is 192.168.1.2. PS1 resides in the public network and its IP address is 220.10.10.2. NAT is enabled between the private and public networks, and the public network IP address is exposed to the private network. Specify PS0 and PS1 to be a tunnel end pair using port 11998 at both ends. PS0 uses the following IP address and port number of the firewall: 220.10.10.1 and 11998.

```
[XE-ls-nat&fw] tunnelpeer tunnelpeer01 private PS0 220.10.10.2 port 11998
public PS1 220.10.10.1 port 11998
```

Feature

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Chapter 1 Number Substitution

1.1 Number Substitution Configuration Commands

1.1.1 area-code (LS-GW view)

Syntax

area-code { *region-code* [*nation-code*] }

undo area-code

View

LS-GW view

Parameter

region-code: Area code.

nation-code: Country code.

Description

Use the **area-code** command to configure the area code and/or country code of the gateway.

Use the **undo area-code** command to delete the country and area codes of the gateway.

XE supports a combination of country code + area code + subscriber number within 31 bits.

By default, the gateway is not configured with any country or area code.

Example

Set the area code and country code of gateway gw01 to 010 and 0086 respectively.

```
[XE-ls-gw-gw01] area-code 010 0086
```

1.1.2 area-code (LS-OFFICEGROUP view)

Syntax

area-code { *region-code* [*nation-code*] }

undo area-code

View

LS-OFFICEGROUP view

Parameter

region-code: Area code.

nation-code: Country code.

Description

Use the **area-code** command to configure the country and/or area codes of the office group.

Use the **undo area-code** command to delete the country and area codes of the office group.

By default, the office device is not configured with any country or area code.

Example

Set the area code and country code of office group og01 to 020 and 0086 respectively.

```
[XE-ls-og-og01] area-code 020 0086
```

1.1.3 area-code-substitute (LS-GW view)

Syntax

area-code-substitute { **enable** | **disable** }

View

LS-GW view

Parameter

enable: Enables the location server (LS) to perform location-based number substitution before sending a number to the gateway.

disable: Disables the LS to perform location-based number substitution before sending a number to the gateway.

Description

Use the **area-code-substitute** command to enable or disable the LS to perform location-based number substitution before sending a number to the gateway.

By default, the LS performs location-based number substitution while sending a number to the gateway.

Example

Disable the LS to perform location-based number substitution while sending a number to gateway gw01.

```
[XE-ls-gw-gw01] area-code-substitute disable
```

1.1.4 area-code-substitute (LS-OFFICEGROUP view)

Syntax

area-code-substitute { **enable** | **disable** }

View

LS-OFFICEGROUP view

Parameter

enable: Enables the LS to perform location-based number substitution before sending a number to the office devices in the office group.

disable: Disables the LS to perform location-based number substitution before sending a number to the office devices in the office group.

Description

Use the **area-code-substitute** command to enable or disable the LS to perform location-based number substitution before sending a number to the office devices in the office group.

By default, the LS does not perform location-based number substitution before sending a number to the office devices in the office group.

Example

Enable the LS to perform location-based number substitution while sending a number to office devices in office group og01.

```
[XE-ls-og-og01] area-code-substitute enable
```

1.1.5 display location-server number-substitute

Syntax

display location-server number-substitute { *table-identifier* | **all** }

View

Any view

Parameter

table-identifier: Name of substitute table.

all: All substitute tables.

Description

Use the **display location-server number-substitute** command to display details about the specified or all substitute tables.

Example

Display details about a substitute table named table1.

```
[XE-ls] display location-server number-substitute table1

------------ Substitute Table Information ------------
 Table Name:             table1

 Rule:            0 callee 8801 9901 before
 Rule:            1 callee 6601 7701 before

[XE-ls-sst-table1]
```

1.1.6 display location-server substitute

Syntax

display location-server substitute

View

Any view

Parameter

None

Description

Use the **display location-server substitute** command to display the substitute tables bound to the LS globally.

Example

Display the substitute tables bound to the LS globally.

```
[XE-ls] display location-server substitute

----------- Global Bound Substitute Table -----------
table1           table2          table3          table4
table5           room1           room2

[XE-ls]
```

1.1.7 display subscriber

Syntax

display subscriber *long-number* [*nation-num* + *region-num*]

View

Any view

Parameter

long-number: Subscriber number of the number resource. It should be within 31 bits.

nation-num: Country code of the number resource.

region-num: Area code of the number resource. The total length of *nation-num* and *region-num* should be within eight bits.

Description

Use the **display subscriber** command to display information about the device the specified number belongs to.

Example

Display information about the device subscriber number 3301 belongs to.

```
<XE> display subscriber 3301
 Long number             = 3301
 Device type             = Gateway
 Device identifier       = gw03
 Device ip address       = 192.168.80.30
 Device port             = 1719
 Device route type       = Dynamic route
 Device Priority = 10
```

1.1.8 number-substitute

Syntax

number-substitute *table- identifier*

undo number-substitute { *table- identifier* | **all** }

View

LS view

Parameter

table- identifier: Substitute table identifier, 1 to 7 characters.

all: All substitute tables.

Description

Use the **number–substitute** command to create a substitute table.

Use the **undo number–substitute** command to delete the specified or all substitute tables.

You can create up to 64 substitute tables, each containing up to eight rules.

By default, no substitute table exists.

Example

Create a substitute table named table1.

```
[XE-ls] number-substitute table1
[XE-ls-sst-table1]
```

1.1.9 policy area-code-substitute

Syntax

policy area-code-substitute { **enable** | **disable** }

undo policy area-code-substitute

View

LS view

Parameter

enable: Enables location-based number substitution.

disable: Disables location-based number substitution.

Description

Use the **policy area-code-substitute** command to enable or disable location-based number substitution.

Use the **undo policy area-code-substitute** command to restore the default.

By default, location-based number substitution is enabled.

Example

Disable location-based number substitution.

```
[XE-ls] policy area-code-substitute disable
```

1.1.10 policy num-substitute

Syntax

policy num-substitute { **enable** | **disable** }

undo policy num-substitute

View

LS view

Parameter

enable: Enables rule-based number substitution.

disable: Disables rule-based number substitution.

Description

Use the **policy num-substitute** command to enable or disable rule-based number substitution.

Use the **undo policy num-substitute** command to restore the default.

By default, rule-base number substitution is enabled.

Example

Disable rule-based number substitution.

```
[XE-ls] policy num-substitute disable
```

1.1.11 policy substitute-inherit

Syntax

policy substitute-inherit { **enable** | **disable** }

undo policy substitute-inherit

View

LS view

Parameter

enable: Enables inheritance-mode number substitution.

disable: Disables inheritance-mode number substitution.

Description

Use the **policy substitute-inherit** command to enable or disable inheritance-mode number substitution.

Use the **undo policy substitute-inherit** command to restore the default state of inheritance-mode number substitution.

By default, inheritance-mode number substitution is enabled.

Example

Disable inheritance-mode number substitution.

```
[XE-ls] policy substitute-inherit disable
```

1.1.12 prefix-rule (Prefix view)

Syntax

prefix-rule *rule-tag* { **caller** *input-format output-format* [**callee** *input-format output-format*] | **callee** *input-format output-format* } { **before** | **after** }

undo prefix-rule { *rule-tag* | **all** }

View

Prefix view

Parameter

rule-tag: Substitute rule tag, in the range of 0 to 1.

caller: Sets input/output calling number pattern.

callee: Sets input/output called number pattern.

input-format: Input number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

output-format: Output number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

before: Performs number substitution before number analysis.

after: Performs number substitution after number analysis.

all: Deletes all substitute rules.

Description

Use the **prefix-rule** command to configure a substitute rule for the static route number.

Use the **undo prefix-rule** command to delete the specified or all substitute rules for the static route number.

You can configure up to two substitute rules for a static route number, each serving the purpose of calling number substitution, called number substitution, or both.

Example

Configure two rules for the static route number 8803.

```
[XE2000-ls-gw-gw01 8803] prefix-rule 0 callee 63..... 83..... before
[XE2000-ls-gw-gw01 8803] prefix-rule 1 caller 88..... 51..... callee 63.....
83..... after
```

1.1.13 rule (LS-GW view)

Syntax

rule *rule-tag* { **caller** *input-format output-format* [**callee** *input-format output-format*] | **callee** *input-format output-format* } { **before** | **after** }

undo rule { *rule-tag* | **all** }

View

LS-GW view

Parameter

rule-tag: Substitute rule tag, in the range of 0 to 7.

caller: Sets input/output calling number pattern.

callee: Set input/output called number pattern.

input-format: Input number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

output-format: Output number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

before: Performs number substitution before number analysis.

after: Performs number substitution after number analysis.

all: Deletes all substitute rules.

Description

Use the **rule** command to configure a substitute rule for the gateway.

Use the **undo rule** command to delete the specified or all substitute rules for the gateway.

You can configure up to eight substitute rules for one gateway, each serving the purpose of calling number substitution, called number substitution, or both, as shown in the following table:

Table 1-1 Configure substitute rules

Operation	Command
Substitute the calling numbers that match the input calling number pattern	**rule** *rule-tag* **caller** *input-format output-format* { **before** | **after** }
Substitute the called numbers that match the input called number pattern	**rule** *rule-tag* **callee** *input-format output-format* { **before** | **after** }

Operation	Command
Substitute both calling and called numbers in a call, provided they match the input calling and called number patterns respectively	**rule** *rule-tag* **caller** *input-format output-format* **callee** *input-format output-format* { **before** | **after** }

Example

Configure three substitute rules for gateway device gw01.

```
[XE2000-ls-gw-gw01] rule 1 caller 88...... 51...... after
[XE2000-ls-gw-gw01] rule 2 callee 63...... 83...... before
[XE2000-ls-gw-gw01] rule 3 caller 88...... 51...... callee 63...... 83......
after
```

1.1.14 rule (LS-OFFICEGROUP view)

Syntax

rule *rule-tag* { **caller** *input-format output-format* [**callee** *input-format output-format*] | **callee** *input-format output-format* } { **before** | **after** }

undo rule { *rule-tag* | **all** }

View

LS-OFFICEGROUP view

Parameter

rule-tag: Substitute rule tag, in the range of 0 to 7.

caller: Sets input/output calling number pattern.

callee: Sets input/output called number pattern.

input-format: Input number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

output-format: Output number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The length should be within 31 digits in length.

before: Performs number substitution before number analysis.

after: Performs number substitution after number analysis.

all: Deletes all substitute rules.

Description

Use the **rule** command to configure a substitute rule for the office group.

Use the **undo rule** command to delete the specified or all substitute rules for the office group.

You can configure up to eight substitute rules for an office group, each serving the purpose of calling number substitution, called number substitution, or both, as shown in the following table:

Table 1-2 Configure substitute rules

Operation	Command
Substitute the calling numbers that match the input calling number pattern	**rule** *rule-tag* **caller** *input-format output-format* { **before** | **after** }
Substitute the called numbers that match the input called number pattern	**rule** *rule-tag* **callee** *input-format output-format* { **before** | **after** }
Substitute both calling and called numbers in a call, provided they match the input calling and called number patterns respectively	**rule** *rule-tag* **caller** *input-format output-format* **callee** *input-format output-format* { **before** | **after** }

Example

Configure three substitute rules for office group og1.

```
[XE2000-ls-og-og1] rule 1 caller 88..... 51..... after
[XE2000-ls-og-og1] rule 2 callee 63..... 83..... before
[XE2000-ls-og-og1] rule 3 caller 88..... 51..... callee 63..... 83.....
after
```

1.1.15 rule (Substitute table view)

Syntax

rule *rule-tag* { **caller** *input-format output-format* [**callee** *input-format output-format*] | **callee** *input-format output-format* } { **before** | **after** }

undo rule { *rule-tag* | **all** }

View

Substitute table view

Parameter

rule-tag: Substitute rule tag, in the range of 0 to 7.

caller: Sets input/output calling number pattern.

callee: Sets input/output called number pattern.

input-format: Input number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

output-format: Output number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

before: Performs number substitution before number analysis.

after: Performs number substitution after number analysis.

all: Deletes substitute rules.

Description

Use the **rule** command to configure a rule in the substitute table.

Use the **undo rule** command to delete the specified or all rules from the substitute table.

You can configure up to eight rules in one substitute table, each serving the purpose of calling number substitution, called number substitution, or both, as shown in the following table:

Example

Configure three rules in substitute table 1.

```
[XE2000-ls-sst-1] rule 1 caller 88..... 51..... after
[XE2000-ls-sst-1] rule 2 callee 63..... 83..... before
[XE2000-ls-sst-1] rule 3 caller 88..... 51..... callee 63..... 83.....
after
```

1.1.16 sscb-rule (Subscriber view)

Syntax

sscb-rule *rule-tag* { **caller** *input-format output-format* [**callee** *input-format output-format*] | **callee** *input-format output-format* } { **before** | **after** }

undo sscb-rule { *rule-tag* | **all** }

View

Subscriber view

Parameter

rule-tag: Substitute rule tag, in the range of 0 to 1.

caller: Sets input/output calling number pattern.

callee: Sets input/output called number pattern.

input-format: Input number pattern, consisting of characters ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

output-format: Output number pattern, using regular expression ^(\^)!(\+)!([0-9ABCD·%!*#]+)(\$)!$. The number should be within 31 digits in length.

before: Performs number substitution before number analysis.

after: Performs number substitution after number analysis.

all: Deletes substitute rules.

Description

Use the **sscb-rule** command to configure a substitute rule for the subscriber line.

Use the **undo ssscb-rule** command to delete the specified or all substitute rules for the subscriber line.

You can configure up to two substitute rules for one voice subscriber line, each serving the purpose of calling number substitution, called number substitution, or both, as shown in the following table:

Table 1-3 Configure substitute rules

Operation	Command
Substitute the calling numbers that match the input calling number pattern	**sscb-rule** *rule-tag* **caller** *input-format output-format* { **before** | **after** }
Substitute the called numbers that match the input called number pattern	**sscb-rule** *rule-tag* **callee** *input-format output-format* { **before** | **after** }
Substitute both calling and called numbers in a call, provided they match the input calling and called number patterns respectively	**sscb-rule** *rule-tag* **caller** *input-format output-format* **callee** *input-format output-format* { **before** | **after** }

Example

Configure two substitute rules for subscriber line 1 of gateway gw01.

```
[XE2000-ls-gw-gw01 #1 8801] sscb-rule 0 callee 63..... 83..... before
[XE2000-ls-gw-gw01 #1 8801] sscb-rule 1 caller 88..... 51..... callee
63..... 83..... after
```

1.1.17 substitute (LS-GW view)

Syntax

substitute *table- identifier*

undo substitute { *table- identifier* | **all** }

View

LS-GW view

Parameter

table-identifier: Substitute table identifier, 1 to 7 characters.

all: Removes the binding of all substitute tables.

Description

Use the **substitute** command to bind a substitute table to the gateway device.

Use the **undo substitute** command to unbind the specified or all substitute tables from the gateway.

You can bind up to eight substitute tables to a gateway.

By default, no substitute table is bound.

Example

Bind the substitute table named table1 to gateway gw01.

```
[XE-ls-gw-gw01] substitute table1
```

1.1.18 substitute (LS-OFFICEGROUP view)

Syntax

substitute *table-identifier*

undo substitute { *table-identifier* | **all** }

View

LS-OFFICEGROUP view

Parameter

table-identifier: Substitute table identifier, 1 to 7 characters.

all: Removes the binding of all substitute tables.

Description

Use the **substitute** command to bind a substitute table to the office group.

Use the **undo substitute** command to unbind the specified or all substitute tables from the office group.

You can bind up to eight substitute tables to each office group.

By default, no substitute table is bound.

Example

Bind a substitute table named table1 to office group og1.

```
[XE-ls-og-og1] substitute table1
```

1.1.19 substitute (LS view)

Syntax

substitute *table-identifier*

undo substitute { *table-identifier* | **all** }

View

LS view

Parameter

table-identifier: Substitute table identifier, 1 to 7 characters.

all: Removes the binding of all substitute tables.

Description

Use the **substitute** command to bind a substitute table to the LS globally.

Use the **undo substitute** command to unbind the specified or all substitute tables from the LS.

You can bind up to 16 substitute tables to the LS globally.

By default, no substitute table is bound.

Example

Bind a substitute table named table1 to the LS globally.

```
[XE-ls] substitute table1
```

1.1.20 substitute (Prefix view)

Syntax

substitute *table-identifier*

undo substitute { *table-identifier* | **all** }

View

Prefix view

Parameter

table-identifier: Substitute table identifier, 1 to 7 characters.

all: Removes the binding of all substitute tables.

Description

Use the **substitute** command to bind a substitute table to a number.

Use the **undo substitute** command to unbind the specified or all substitute tables from the prefix.

You can bind up to two substitute tables to a static route number.

By default, no substitute table is bound.

Example

Bind a substitute table named table1 to the number 01067689445.

```
[XE-ls-gw-gw01 01067689445] substitute table1
```

1.1.21 substitute (Subscriber view)

Syntax

substitute *table-identifier*

undo substitute { *table-identifier* | **all** }

View

Subscriber view

Parameter

table-identifier: Substitute table identifier, 1 to 7 characters.

all: Removes the binding of all substitute tables.

Description

Use the **substitute** command to bind a substitute table to the subscriber line.

Use the **undo substitute** command to unbind the specified or all substitute tables from the subscriber line.

You can bind up to two substitute tables to a subscriber line.

By default, no substitute table is bound.

Example

Bind a substitute table named table1 to subscriber line 01.

```
[XE-ls-gw-gw01] subscriber #01 67689445
[XE-ls-gw-gw01 #01 67689445] substitute table1
```

Chapter 2 Backup and Load Sharing

2.1 Backup and Load Sharing Configuration Commands

2.1.1 load-share

Syntax

load-share { **disable** | **enable** }

undo load-share

View

LS-GW view

Parameter

enable: Enables the backup and load sharing capabilities of the gateway.

disable: Disables the backup and load sharing capabilities of the gateway.

Description

Use the **load-share** command to enable or disable the load sharing capability of the gateway.

Use the **undo load-share** command to restore the default.

By default, the load sharing capability of the gateway is disabled.

Note:

Even when the load sharing capability of a gateway is disabled with the **load-share disable** command, the gateway can affect the overall load sharing policy of the system.

Example

Enable the load sharing capability of gateway gw0.

```
[XE-ls-gw-gw0] load-share enable
```

2.1.2 ls-back

Syntax

ls-back { **disable** | **enable** }

View

PS view

Parameter

disable: Disables the PS from sending interrogation messages to the LS with higher priority levels.

enable: Enables the PS to send interrogation messages to the LS with higher priority levels so that once an LS with higher priority is available, the PS ends the connection with the current LS and establishes a connection with the LS with higher priority.

Description

Use the **ls-back** command to configure the LS backup policy, namely specify whether to enable the PS, if the LS connected with which is not the LS with the highest priority, to probe for the LS with the highest priority by polling the LS. If the PS is enabled to poll the LS, and if a high-priority LS is available, the PS will end the connection with the current LS and start a connection with the high-priority LS. If the polling function is disabled, the PS will keep using the current LS.

By default, the polling function is disabled.

Example

Enable the polling function of the PS.

```
[XE-ps]ls-back enable
```

2.1.3 psgroup-id (LS-GW view)

Syntax

psgroup-id *group-id* [**master-ps** *ps-id*]

undo psgroup-id

View

LS-GW view

Parameter

group-id: process server (PS) group identifier, 1 to 32 characters.

master-ps: The primary PS in the PS group that the gateway device belongs to.

ps-id: ID of the primary PS for gateway registration.

Description

Use the **psgroup-id** command to assign the gateway to a PS group as well as the primary PS.

Use the **undo psgroup-id** command to restore the default.

By default, the gateway does not belong to any PS group.

Example

Assign gateway gw0 to a PS group named group1 and specify that the primary PS is masterProcessServer.

```
[XE-ls-gw-gw0] psgroup-id group1 master-ps masterProcessServer
```

2.1.4 psgroup-id (LS-PS view)

Syntax

psgroup-id *group-id*

undo psgroup-id

View

LS-PS view

Parameter

group-id: PS group identifier, 1 to 32 characters.

Description

Use the **psgroup-id** command to assign the PS to a PS group.

Use the **undo psgroup-id** command to restore the default.

By default, the PS does not belong to any PS group.

Example

Assign ps0 to PS group named group1.

```
[XE-ls-ps-ps0] psgroup-id group1
```

2.1.5 ras-port

Syntax

ras-port *number*

undo ras-port

View

LS-PS view

Parameter

number: Specifies the port where the PS receives/transmits RAS signaling as a backup PS or the PS in a redirect. It is in the range of 1 to 65535 and defaults to 1719.

Description

Use the **ras-port** command to configure the port where the PS receives/transmits RAS signaling as a backup PS or as the PS in a redirect.

Use the **undo ras-port** command to restore the default.

Example

Configure the PS named ps0 to transmit/receive RAS signaling on port 500 when functioning as a backup PS or the PS in a redirect.

```
[XE-ls-ps-ps0] ras-port 500
```

2.1.6 register-port

Syntax

register-port *port*

undo register-port

View

LS-OFFICEGROUP-OFFICE view.

Parameter

port: Number of the port through which the PS receives registration messages, in the range of 1 to 65535.

Description

Use the **register-port** command to configure the registration port for PS backup. The registration port for PS backup is the port that the secondary PSs use to receive the REGISTER message.

Use the **undo register-port** command to restore the default registration port.

By default, the backup registration port is port 5060.

Example

Set the backup registration port the secondary PSs to 6000.

```
[XE-ls-og-og01 of1]register-port 6000
```

2.1.7 relative-capability

Syntax

relative-capability *value*

undo relative-capability

View

LS-PS view

Parameter

value: Relative capability of the PS, an integer in the range of 1 to 100. It defaults to 1.

Description

Use the **relative-capability** command to configure the relative capability of the PS.

Use the **undo relative-capability** command to restore the default relative capability of the PS.

The relative capability of a PS is the voice service processing capability of the PS relative to other PSs in the same group. This capability is set considering hardware performance, bandwidth, and number of allowed subscriber lines available with each PS in the same group.

Example

Set the relative capability of a PS named ps0 to 10.

```
[XE-ls-ps-ps0] relative-capability 10
```

2.1.8 sip-port

Syntax

sip-port *number*

undo sip-port

View

LS-PS view

Parameter

number: Specifies the port where the PS receives/transmits SIP signaling as a backup PS or the PS in a redirect. It is in the range of 1 to 65535 and defaults to 5060.

Description

Use the **sip-port** command to configure the port where the PS receives/transmits SIP signaling as a backup PS or as the PS in a redirect.

Use the **undo sip-port** command to restore the default.

Example

Configure the PS named ps0 to transmit/receive SIP signaling on port 1000 when functioning as a backup PS or the PS in a redirect.

```
[XE-ls-ps-ps0] sip-port 1000
```

2.1.9 subsline-sum

Syntax

subsline-sum *value*

undo subsline-sum

View

LS-GW view

Parameter

value: Number of subscriber lines, an integer in the range of 1 to 1000. It defaults to 4.

Description

Use the **subsline-sum** command to set the number of subscriber lines that can be accommodated by the gateway.

Use the **undo subsline-sum** command to restore the default.

This setting is not the number of subscriber lines that can be accommodated by the hardware of the gateway. It is rather a value specified considering the hardware performance of the gateway relative to other gateways. This setting will take effect in the load sharing policy for your voice network.

The number of subscriber lines set using this command however can be the same as that accommodated by the hardware.

Example

Set the number of subscriber lines that can be accommodated by gateway gw0 to 25.

```
[XE-ls-gw-gw0] subsline-sum 25
```

Chapter 3 Overload Protection

3.1 Overload Protection Configuration Commands

3.1.1 cpu

Syntax

cpu *value* **discard** *chance*

undo cpu { *value* | **all** }

View

Overload protection view

Parameter

value: CPU overload protection threshold, an integer in the range 10 to 95. When CPU load exceeds this value, the system begins to drop messages.

chance: Message drop probability, an integer in the range 1 to 100.

all: Deletes all protection configuration entries.

Description

Use the **cpu** command to create a protection configuration table entry, mapping CPU overload protection threshold to message drop probability. You can configure up to five entries.

Use the **undo cpu** command to delete the specified or all protection configuration entries.

By default, no protection configuration entry is configured.

Example

Configure the system to discard all voice call request messages when CPU load reaches 90%.

```
[XE-olp] cpu 90 discard 100
```

3.1.2 display overload

Syntax

display overload

View

Any view

Parameter

None

Description

Use the **display overload** command to display the overload protection configuration.

Example

Display the overload protection configuration.

```
<XE> display overload
Overload Protection is currently on!
  Protection Config Table
  -------------------
  cpu 90 discard 90
  cpu 80 discard 40
  cpu 70 discard 30
  cpu 60 discard 20
  cpu 50 discard 10
  -------------------
```

3.1.3 overload-protection

Syntax

overload-protection

View

System view

Parameter

None

Description

Use the **overload-protection** command to enter overload protection view.

Example

Enter overload protection view.

```
[XE] overload-protection
[XE-olp]
```

3.1.4 start

Syntax

start

View

Overload protection view

Parameter

None

Description

Use the **start** command to enable overload protection.

By default, overload protection is disabled.

Example

Enable overload protection.

```
[XE-olp] start
 Overload Protection started.
[XE-olp]
```

3.1.5 stop

Syntax

stop

View

Overload protection view

Parameter

None

Description

Use the **stop** command to disable overload protection.

By default, overload protection is disabled.

Example

Disable overload protection.

```
[XE-olp] stop
 Overload Protection stopped.
[XE-olp]
```

Chapter 4 VoIP RADIUS Accounting Configuration

4.1 VoIP RADIUS Accounting Configuration Commands

4.1.1 aaa enable

Syntax

aaa enable

undo aaa enable

View

System view

Parameter

None

Description

Use the **aaa enable** command to enable AAA.

Use the **undo aaa enable** command to disable AAA.

By default, AAA is disabled.

Example

Enable AAA.

```
[XE]aaa enable
```

4.1.2 radius server

Syntax

radius server { *radius-server-name* | *radius-server-ip* } [**accounting-port** *accounting-port*]

undo radius server

View

System view

Parameter

radius-server-name: Host name of the RADIUS accounting server.

radius-server-ip: IP address of the RADIUS accounting server.

accounting-port: Port through which the RADIUS accounting server receives accounting request messages. The default port number is 1813.

Description

Use the **radius server** command to configure the information of the RADIUS accounting server used by the XE IP PBX.

Use the **undo radius server** command to delete the RADIUS accounting server.

Example

Set the IP address of the RADIUS accounting server used of the XE IP PBX to 192.168.1.10, and specify port 10000 as the port through which the accounting request messages are received.

```
[XE]radius server 192.168.1.10 accounting-port 10000
```

4.1.3 radius shared-key

Syntax

radius shared-key pwd

undo radius shared-key

View

System view

Parameter

pwd: Shared access password of the RADIUS accounting server, a character string consisting of 1 to 15 characters.

Description

Use the **radius shared-key** command to configure the on the XE IP PBX, which must be the same as configured on the RADIUS accounting server.

Use the **undo radius shared-key** command to delete the shared access password of the RADIUS accounting server.

Example

Specify “acc-pwd” as the shared access password of the RADIUS accounting server.

```
[XE]radius shared-key acc-pwd
```

4.1.4 radius source-address

Syntax

radius source-address *ip-address*

undo radius source-address

View

System view

Parameter

ip-address: The source IP address of all the RADIUS packets.

Description

Use the **radius source-address** command to specify a source IP address for the RADIUS packets transmitted from the XE IP PBX.

Use the **undo radius source-address** command to disable specifying a source IP address for the RADIUS packets.

By default, no IP address is specified for transmitting RADIUS packets.

If the same source IP address is specified for all the RADIUS packets, the RADIUS server will only need to contact the XE IP PBX using that IP address, instead of registering the IP addresses of all the interfaces that are likely to send RADIUS packets.

Example

Use 192.168.80.1 as the source IP address of all the RADIUS packets.

```
[XE] radius source-address 192.168.80.1
```

4.1.5 radius timer response-timeout

Syntax

radius timer response-timeout *seconds*

undo radius timer response-timeout

View

System view

Parameter

seconds: Timeout value for the RADIUS server, ranging from 1 to 300 seconds. The default value is 5 seconds.

Description

Use the **radius timer response-timeout** command to configure the timeout value of the RADIUS server.

Use the **undo radius timer response-timeout** command to restore the default value.

When replies are required for sent packets (like authenticating request packets), the timeout value should be configured, and packets will be retransmitted in case of timeout.

Example

Configure the timeout value for the RADIUS server to 5 seconds.

```
[XE] radius timer response-timeout 5
```

4.1.6 acct

Syntax

acct { **enable** | **disable** }

View

LS-OFFICEGROUP-OFFICE view.

Parameter

enable: Enables accounting on calling users on office devices.

disable: Disables accounting on calling users on office devices.

Description

Use the **acct** command to enable/disable accounting on calling users on office devices. After accounting is enabled for office devices, when a user on an office device calls a user in the LS domain, the XE IP PBX will request the RADIUS accounting server to implement accounting on the calling user.

By default, accounting is disabled for calling users on office devices.

Example

Disable accounting for calling users on office device “office1”.

```
[XE-ls-og-og01]office office1
[XE-ls-og-og01 office1]acct disable
[XE-ls-og-og01 office1]
```

System Management

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Chapter 1 Terminal Service and User Interface Configuration Commands

1.1 User Interface Configuration Commands

1.1.1 authentication-mode

Syntax

authentication-mode { **local** | **password** | **scheme** { *scheme-name* | **default** } }

authentication-mode none

View

User interface view

Parameter

local: Specifies to perform local authentication.

password: Specifies to perform password authentication.

scheme: Specifies to perform AAA authorization and authentication.

default: Uses the default authentication scheme.

scheme-name: Specifies an authentication scheme.

none: No authentication.

Description

Use the **authentication-mode** command to set the mode used to authenticate users at login.

Use the **authentication-mode none** command to skip authentication at user login.

By default, the authentication mode is set to **password** for the VTY user interface and **none** for other user interfaces.

Related command: **set authentication password**.

Example

Enable local password authentication.

```
[XE-ui0] authentication-mode password
```

1.1.2 auto-execute command

Syntax

auto-execute command *command*

undo auto-execute command

View

User interface view

Parameter

command: The command to be automatically executed.

Description

Use the **auto-execute command** command to set a command to be automatically executed.

Use the **undo auto-execute command** command to disable the setting.

By default, the **auto-execution** command is disabled.

Note that the **auto-execute command** command can be configured on all interfaces except for the console port.

The system automatically executes the command specified by the **auto-execute command** command at each login on the terminal and disconnects the user connection upon completion of execution.

A common approach is to issue a Telnet command using the **auto-execute command** command on the terminal so that the user may automatically connect to the specified host.

Use this command with cautions as it may make you unable to use this user interface to configure the system.

 **Caution:**

Before configuring the **auto-execute command** command and saving the configuration by executing the **save** command, make sure that you can access the system to remove the configuration by other means.

Example

Execute the **telnet** 10.110.100.1 command automatically at login on the AUX interface.

```
[XE-ui-aux0] auto-execute command telnet 10.110.100.1
```

1.1.3 databits

Syntax

databits { **5** | **6** | **7** | **8** }

undo databits

View

User interface view

Parameter

5: Data bits are 5.

6: Data bits are 6.

7: Data bits are 7.

8: Data bits are 8.

Description

Use the **databits** command to set data bits for the user interface.

Use the **undo databits** command to restore the default data bits, that is, eight.

The configuration takes effect only when the AUX interface works in asynchronous flow mode.

Example

Set data bits to 5.

```
[XE-ui-aux0] databits 5
```

1.1.4 debugging vty

Syntax

debugging vty { **fsm** | **negotiate** }

undo debugging vty { **fsm** | **negotiate** }

View

User view

Parameter

fsm: Enables to debug Telnet state machine.

negotiate: Enables to debug VTY option negotiation.

Description

Use the **debugging vty** command to enable VTY debugging.

Use the **undo debugging vty** command to disable VTY debugging.

Example

Enable VTY option negotiation debugging.

```
<XE> debugging vty negotiate
```

1.1.5 display user-interface

Syntax

display user-interface [*type-name*] [*number*]

View

Any view

Parameter

type-name: Specifies a user interface by its type.

number: Specifies a user interface by its number.

Description

Use the **display user-interface** command to view the details of one or all user interfaces.

Example

Display information of user interface 0.

```
<XE> display user-interface 0
  Idx  Type     Tx/Rx      Modem Privi Auth
* 0    CON 0    9600             3     N

  *    : Current user-interface is active.
  I    : Current user-interface is active and work in async mode.
  Idx  : Absolute index of user-interface.
  Type : Type and relative index of user-interface.
  Privi: The privilege of user-interface.
  Auth : The authentication mode of user-interface.
      A: Authenticate use AAA.
      L: Authenticate use local database.
      N: Current user-interface need not authentication.
      P: Authenticate use current UI's password.
```

1.1.6 display users

Syntax

display users [**all**]

View

Any view

Parameter

all: Displays information on the users of all the user interfaces.

Description

Use the **display users** command to view the login information of all the user interface users.

Example

Execute the **display users** command on the console, and you will get the following results:

```
<XE> display users
      UI          Delay       Type    Ipaddress       Username
+ 0  CON 0        00:00:00
  34 VTY 0        00:00:09    TEL     10.110.101.39   dd
```

Table 1-1 Description on the fields

Field	Description
+	The user interface in use.
UI	The first number and the second number are the absolute number and relative number of the user interface respectively.
Delay	The interval since the last input, in minutes.
Type	The type of the user using the user interface.
IPaddress	The starting connection location, namely, IP address of the connected host.
Username	Name of the user using this user-interface, namely the user's login name. This field is void now, because AAA authentication is not required.

1.1.7 flow-control

Syntax

flow-control { **hardware** | **software** | **none** }

undo flow-control

View

User interface view

Parameter

none: No flow control.

software: Software flow control.

hardware: Hardware flow control , only applicable to the AUX port.

Description

Use the **flow-control** command to configure the flow control mode.

Use the **undo flow-control** command to restore the default, that is, **none**.

The configuration becomes effective only when the AUX interface works in the asynchronous flow mode.

When the system is producing information, press <Ctrl+S> to stop sending output to the screen or press <Ctrl+Q> to resume the sending of output.

Example

Configure software flow control in user interface view.

```
[XE-ui-console0] flow-control software
```

1.1.8 free user-interface

Syntax

free user-interface [*type-name*] *number*

View

User view

Parameter

type-name: User interface type.

number: Absolute/relative user interface number.

Description

Use the **free user-interface** *number* command to clear the user interface with the number defined by the parameter *number*.

Use the **free user-interface** *type-name number* command to clear the user interface specified by *number* and by *type-name*.

Example

Clear user-interface 0.

```
<XE> free user-interface 0
```

1.1.9 history-command max-size

Syntax

history-command max-size *size-value*

undo history-command max-size

View

User interface view

Parameter

size-value: History command buffer size in the range of 0 to 256. It defaults to 10, meaning up to ten history commands can be stored.

Description

Use the **history-command max-size** command to set the size of the history command buffer.

Use the **undo history-command max-size** command to restore the default setting.

Example

Set the size of the history command buffer to 20.

```
[XE-ui-console0] history-command max-size 20
```

1.1.10 idle-timeout

Syntax

idle-timeout *minutes* [*seconds*]

undo idle-timeout

View

User interface view

Parameter

minutes: Number of minutes, in the range of 0 to 35791.

seconds: Number of seconds, in the range of 0 to 59.

Description

Use the **idle-timeout** command to set time interval for scheduled disconnection.

Use the **undo idle-timeout** command to restore the default setting.

The time interval for scheduled disconnection defaults to 10 minutes.

Setting the time value to 0 disables scheduled disconnection, that is, the connection is always up.

Example

Set the timeout to one minute and thirty seconds.

```
[XE-ui-console0] idle-timeout 1 30
```

1.1.11 local-user level

Syntax

local-user *local-user* **level** *level*

undo local-user *local-user* **level**

View

System view

Parameter

local-user: Name of a local user.

level: User priority in the range of 0 to 3.

Description

Use the **local-user level** command to assign a priority to a local user.

Use the **undo local-user level** command to restore the default setting.

This command can be used in combination with the **local-user password** command.

Related command: **local-user password**.

Example

Add a local user, whose username is XE, password is h3c (displayed in cipher text), and priority is 2.

```
[XE] local-user XE password cipher h3c
[XE] local-user XE level 2
```

1.1.12 modem

Syntax

modem [**call-in** | **both**]

undo modem [**call-in** | **both**]

View

User interface view

Parameter

call-in: Allows incoming calls.

both: Allows both incoming and outgoing calls.

Description

Use the **modem** command to set the incoming/outgoing call attributes of the modem.

Use the **undo modem** command to disable incoming and outgoing calls.

By default, both incoming and outgoing calls are allowed.

When executed without any parameters, the **modem** command enables both incoming and outgoing calls.

When executed without any parameters, the **undo modem** command disables both incoming and outgoing calls.

This command is only applicable to the AUX port, not to the CON port.

Example

Set the incoming and outgoing attributes for the modem.

```
[XE-ui1] modem
```

1.1.13 modem auto-answer

Syntax

modem auto-answer

undo modem auto-answer

View

User interface view

Parameter

None

Description

Use the **modem auto-answer** command to set the answer mode to auto-answer.

Use the **undo modem auto-answer** command to restore the default answer mode, that is, manual answer.

This command is only applicable to the AUX port, not to the console port.

When using modem dial-up for connection, you must first set the modem parameters on the related user interface.

Example

Set the answer mode to auto-answer.

```
[XE-ui-aux0] modem auto-answer
```

1.1.14 modem timer answer

Syntax

modem timer answer *seconds*

undo modem timer answer

View

User interface view

Parameter

seconds: Timeout time in the range of 1 to 60 seconds.

Description

Use the **modem timer answer** command to set the timeout waiting for the carrier signal after off-hook when setting up an inbound connection.

Use the **undo modem timer answer** command to restore the default setting, that is, 30 seconds.

This command is only applicable to the AUX port, not to the console port.

Example

Set timeout time to 40 seconds.

```
[XE-ui-aux0] modem timer answer 40
```

1.1.15 parity

Syntax

parity { **none** | **even** | **odd** | **mark** | **space** }

undo parity

View

User interface view

Parameter

none: No parity check.

even: Even parity check.

odd: Odd parity check.

mark: Mark check.

space: Space check.

Description

Use the **parity** command to set the parity bit of the user interface.

Use the **undo parity** command to restore the default check mode, that is, **none**.

The configuration is effective only when the AUX interface works in asynchronous flow mode.

Example

Set the transmission parity bit on the AUX interface to odd parity.

```
[XE-ui-aux0] parity odd
```

1.1.16 redirect

Syntax

redirect

undo redirect

View

User interface view

Parameter

None

Description

Use the **redirect** command to enable redirection on the asynchronous port.

Use the **undo redirect** command to disable redirection on the asynchronous port.

By default, redirection is disabled.

This command is only applicable to AUX user interfaces.

Related command: **telnet**, **display tcp status**.

Example

Enable redirect on the user interface AUX0.

```
[XE-ui-aux0] redirect
```

1.1.17 screen-length

Syntax

screen-length *screen-length*

undo screen-length

View

User interface view

Parameter

screen-length: Number of lines displayed on the screen, in the range of 0 to 512.

Description

Use the **screen-length** command to set the number of lines displayed on the terminal screen.

Use the **undo screen-length** command to restore the default 24 lines.

Setting the screen length to 0 disables multiple-screen output.

Example

Set the number of lines on the terminal screen to 30.

```
[XE-ui-console0] screen-length 30
```

1.1.18 send

Syntax

send { *number* | **all** | *type-name number* }

View

User view

Parameter

all: Sends messages to all user interfaces.

type-name: Type of user interface.

number: Absolute/Relative user interface number.

Description

Use the **send** command to transfer messages between user interfaces.

Use the **send all** command to send messages to all user-interfaces.

Use the **send** *number* command to send messages to the user interface specified by the *number* argument.

Use the **send** *type-name number* command to send messages to the user interface specified by the *type-name* and *number arguments*.

Example

Send messages to a user interface of the console type.

```
<XE> send con 0
Enter message, end with CTRL+Z or Enter; abort with CTRL+C:
Hello,good morning!
Send message? [Y/N]:y
```

1.1.19 set authentication password

Syntax

set authentication password { **simple** | **cipher** } *password*

undo set authentication password

View

User interface view

Parameter

simple: Plain text password.

cipher: Encrypted password.

password: If the password format is set to **simple**, the parameter *password* must be in plain text; if it is set to **cipher**, the *password* can be either in cipher text or in plain text depending on what has been input. A plain text password can be a string of no more than 16 consecutive characters, 1234567 for example. An encrypted password, however, must be of 24 characters in length and must be in cipher text, _(TT8F]Y\5SQ=^Q`MAF4<1!! for example.

Description

Use the **set authentication password** command to set a local authentication password.

Use the **undo set authentication password** command to remove the local authentication password.

Regardless of whether the password format is set to plain text or cipher text, you must input plain text password at authentication time.

When configuring a password, you must specify its format either to **simple** or to **cipher**. If the former is specified, the password is saved in plain text in the configuration file. If the latter is specified, however, the password is displayed in cipher text regardless of whether the password you enter is a plain text password of 1 to 16 characters or a cipher text password of 24 bytes.

By default, Telnet users are required to provide passwords at login, that is, the **authentication-mode password** command applies. If no password is configured, the following information appears:

```
password required, but  none set
```

Related command: **authentication-mode**.

Example

Set the local authentication password to “h3c” for the user interfaces VTYs 0 through 4.

```
[XE-ui-vty0-4] authentication-mode password
[XE-ui-vty0-4] set authentication password simple h3c
```

1.1.20 shell

Syntax

shell

undo shell

View

User interface view

Parameter

None

Description

Use the **shell** command to enable terminal service on the user interface.

Use the **undo shell** command to remove the current setting.

By default, terminal service is enabled on all the user interfaces.

Console port does not support the **undo shell** command.

Example

Disable terminal service on the virtual terminals (VTYs) 0 through 4.

```
[XE] user-interface vty 0 4
```

```
[XE-ui-vty0-4] undo shell
```

When a Telnet terminal logs on, the following information is displayed:

```
% connection refused by remote host!
```

1.1.21 speed

Syntax

speed *speed-value*

undo speed

View

User interface view

Parameter

speed-value: Transmission rate in bps.

Description

Use the **speed** command to set the transmission rate of the user interface.

Use the **undo speed** command to restore the default, that is, 9600 bps.

Only when the AUX interface works in asynchronous flow mode can the configuration take effect.

The transmission rates supported by the AUX port include:

- 300 bps
- 600 bps
- 1200 bps
- 4800 bps
- 9600 bps
- 19200 bps
- 38400 bps
- 57600 bps
- 115200 bps

Example

Set the transmission rate of the user interface to 19200 bps.

```
[XE-ui-vty0] speed 19200
```

1.1.22 stopbits

Syntax

stopbits { **1.5** | **1** | **2** }

undo stopbits

View

User interface view

Parameter

1.5: Stop bit is 1.5.

1: Stop bit is 1.

2: Stop bit is 2.

Description

Use the **stopbits** command to set the stop bits on the user interface.

Use the **undo stopbits** command to restore the default setting, that is, 1.

Only when the AUX interface works in asynchronous flow mode can the configuration take effect.

Example

Set stop bit to 1.5.

```
[XE-ui-vty0] stopbits 1.5
```

1.1.23 user privilege

Syntax

user privilege level *level*

undo user privilege level

View

User interface view

Parameter

level: Command level in the range of 0 to 3.

Description

Use the **user privilege** command to configure the command level that the login user on the current user interface can access.

Use the **undo user privilege** command to remove the current configuration. The configuration takes effect at next login.

By default, the default command level is set to 3 for console user interfaces and 0 for other user interfaces.

When the level of a user conflicts with the level of the user interface where the user logs in, the former overrides the latter. For example, the command level of VTY 0 user interface is 2; however, user 007 has the right to access command level 3. If 007 logs in from VTY 0 user interface, he can access commands at level 3 and lower.

Example

Set the command level that the user logging in from the interface VTY 0 to 2.

```
[XE-ui-vty0] user privilege level 2
```

After the user telnets to the H3C XE 200/2000 IP PBX (hereinafter referred to as XE IP PBX) from vty 0, the terminal displays:

```
<XE>
```

1.1.24 user-interface

Syntax

user-interface [*type-keyword*] *user-interface-number* [*ending-user-interface-number*]

View

System view

Parameter

type-keyword : Type of a user interface.

user-interface-number: The first user interface to be configured.

ending-user-interface-number: The last user interface to be configured.

Description

Use the **user-interface** command to enter single-user interface view or multi-user interface view.

Example

Enter the view of user interface console 0 to configure the interface.

```
[XE] user-interface console 0
[XE-ui-console0]
```

Enter the view of user interface vty 0 to configure the interface.

```
[XE] user-interface vty 0
[XE-ui-vty0]
```

Enter the user interface VTY view to configure VTYs 0 through 3.

```
[XE] user-interface vty 0 3
[XE-ui-vty0-3]
```

Enter user interface view to configure user interfaces 0 through 4. The types of the interfaces include console, AUX and VTY. The actual user interface types however depend on the interfaces provided by the XE IP PBX.

The following example is specific for the case in which there are one console port user interface, one AUX port user interface and two VTY user interfaces.

```
[XE] user-interface 0 3
[XE-ui0-3]
```

1.2 Telnet Terminal Service Configuration Commands

1.2.1 debugging telnet

Syntax

debugging telnet

undo debugging telnet

View

User view

Parameter

None

Description

Use the **debugging telnet** command to enable Telnet connection debugging.

Use the **undo debugging telnet** command to disable Telnet connection debugging.

By default, Telnet connection debugging is disabled.

Related command: **telnet**.

Example

Enable Telnet connection debugging.

```
<XE> debugging telnet
```

1.2.2 display tcp status

Syntax

display tcp status

View

Any view

Parameter

None

Description

Use the **display tcp status** command to view information on all current TCP connections.

Compared with the **display users** command, the **display tcp status** command can display more information about Telnet clients and servers.

The information that this command can provide includes local address, local port number, external address, external port number, and connection status.

Related command: **telnet**.

Example

Display information on TCP connections.

```
<XE> display tcp status
TCPCB     Local Add:port        Foreign Add:port        State
028ca412  129.102.100.142:23    129.102.001:092      Established
028ca414  0.0.0.0:23            0.0.0.0:0              Listening
```

The above information indicates that one TCP connection is present, whose local IP address is 129.102.100.142, local port number is 23, and the remote IP address is 129.102.1.92. The information also indicates that a local server process is listening to port 23.

1.2.3 telnet

Syntax

telnet *host-ip-address* [*service-port*]

View

User view

Parameter

host-ip-address: Hostname or IP address of the remote XE IP PBX, in dotted decimal format.

service-port: ID of the TCP port through which the remote XE IP PBX provides Telnet services, in the range of 0 to 65535.

Description

Use the **telnet** command to Telnet to another device through the current XE IP PBX.

If the *service-port* argument is not specified, the Telnet port number defaults to 23.

With this command, you can easily telnet to another XE IP PBX from the current IP PBX for remote management.

Related command: **display tcp status**.

Example

Telnet from the current IP PBX (that is, XE1) to another XE IP PBX (that is XE2) with an IP address of 129.102.0.1.

```
<XE> telnet 129.102.0.1
Trying 129.102.0.1...
Service port is 23
Connected to 129.102.0.1
<XE2>
```

Chapter 2 GUI Server Configuration and Management Commands

2.1 GUI Server Configuration and Management Commands

2.1.1 gui

Syntax

gui

View

System view

Parameter

None

Description

Use the **gui** command to enter GUI configuration view.

Example

Enter GUI configuration view.

```
[XE2000] gui
[XE2000-gui]
```

2.1.2 gui-config

Syntax

gui-config interface *interface-type slot-number* [**port** *port*]

undo gui-config

View

GUI configuration view

Parameter

interface-type: Interface type.

slot-number: Interface number.

Port: GUI service port number. It ranges from 1 to 65535 and defaults to 10999.

Description

Use the **gui-config** command to configure basic GUI server information.

Use the **undo gui-config** command to delete basic GUI server information.

By default no basic GUI server information is configured.

Example

Configure basic GUI server information to use interface GigabitEthernet0/0 and service port 11000.

```
[XE2000-gui]gui-config interface GigabitEthernet 0/0 port 11000
```

2.1.3 start

Syntax

start

View

GUI configuration view

Parameter

None

Description

Use the **start** command to enable the GUI server.

By default, the GUI server is disabled.

Example

Enable the GUI server.

```
[XE2000-gui]start
  GUI Server is running now
```

2.1.4 stop

Syntax

stop

View

GUI configuration view

Parameter

None

Description

Use the **stop** command to disable the GUI server.

Example

Disable the GUI server.

```
[XE2000-gui]stop
  GUI Server is stopped now
[XE2000-gui]
```

2.1.5 reset-ual

Syntax

reset-ual

View

GUI configuration view

Parameter

None

Description

Use the **reset-ual** command to restore the user information list to the initial state. That is, it is to delete all accounts created by the administrator so that only the default account is contained in the list. Note to disable the GUI server before you run this command.

Example

Restore the user information list to the initial state.

```
[XE2000-gui]reset-ual
  NOTICE:This command will reset the GUI User Accout List to its initial
  status which contains only the default accout! Continue?[Y/N]:y
  User Accout List has been reset.
[XE2000-gui]
```

2.1.6 web

Syntax

web { **start** | **stop** }

View

GUI configuration view

Parameter

start: Enable the Web service.

stop: Disable the Web service.

Description

Use the **web** command to enable/disable the Web service.

By default, the Web service is disabled.

Example

Enable the Web service.

```
[XE2000-gui]web start
  WEB Server is started!
[XE2000-gui]
```

2.1.7 display gui-user

Syntax

display gui-user { **all** | **online** }

View

Any view

Parameter

all: Displays all GUI administrators.

online: Displays the current login administrartors.

Description

Use the **display gui-user** command to display administrator information.

Example

Display the current login administrators.

```
[XE2000-gui]display gui-user online

  User Name        User Level   IP Address      Port
  ================================================
  XEAdmin          Super        192.168.1.88    1675
  ================================================
  User Number : 1

[XE2000-gui]
```

Table 2-1 Description on the fields of the **display gui-user** command

Item	Description
User Name	User name
User Level	User level
IP Address	The IP address of the GUI client that the user uses.
Port	The port of the GUI client that the user uses.
User Number	User number

2.1.8 access (LS-GW view)

Syntax

access { **permit** | **prohibit** }

View

LS-GW view

Parameter

permit: Permits normal administrators' operations.

prohibit: Prohibits normal administrators' operations.

Description

Use the **access** { **permit** | **prohibit** } command to permit/prohibit normal administrators' operations on a specific gateway device.

By default, normal administrators can operate gateway devices.

Example

Prohibit normal administrators' operations on gateway GW0.

```
[XE2000-ls]gateway GW0
[XE2000-ls-gw-GW0]access prohibit
```

2.1.9 access (LS-OFFICEGROUP view)

Syntax

access { **permit** | **prohibit** }

View

LS-OFFICEGROUP view

Parameter

permit: Permits normal administrators' operations.

prohibit: Prohibits normal administrators' operations.

Description

Use the **access** command to permit/prohibit normal administrators' operations on a specific office device.

By default, normal administrators can operate office devices.

Example

Prohibit normal administrators' operations on office device og01.

```
[XE2000-ls-og-og01] access prohibit
```

2.1.10 access list

Syntax

access list { **gateway** | **office** } { **permit** | **prohibit** }

View

LS view

Parameter

gateway: Gateway device.

office: Office device.

permit: Permits normal administrators' operations.

prohibit: Prohibits normal administrators' operations.

Description

Use the **access list** command to permit/prohibit normal administrators to add/delete gateway/office devices.

By default, normal administrators can add/delete gateway/office devices.

Example

Prohibit normal administrators to add/delete office devices.

```
[XE2000-ls]access list office prohibit
```

2.1.11 access command

Syntax

access command { **gateway** | **gw:ip-address** | **office-group** } { **permit** | **prohibit** }

View

LS view

Parameter

gateway: Permits/prohibits normal administrators' right to run commands in gateway view.

gw:ip-address: Permits/prohibits normal administrators' right to configure IP addresses (including dynamic IP addresses) for gateway devices.

office: Permits/prohibits normal administrators' right to run commands in office group view.

permit: Permits normal administrators' operations.

prohibit: Permits normal administrators' operations.

Description

Use the **access command** command to permit/prohibit normal administrators to configure IP addresses (including dynamic IP addresses) for gateway devices, and permit/prohibit them to run commands in office group view.

By default, normal administrators can perform the above operations.

Example

Prohibit normal administrators from running all commands in gateway view.

```
[XE2000-ls]access command gateway prohibit
```

Chapter 3 System Maintenance and Management Commands

3.1 Network Diagnostic Commands

3.1.1 debugging

Syntax

debugging { **all** | *module-name* [*debug-option1*] [*debug-option2*] …}

undo debugging { **all** | *module-name* [*debug-option1*] [*debug-option2*] … }

View

User view

Parameter

all: Enables/disables all the debugging.

module-name: Module name.

debug-option: Debugging option.

Description

Use the **debug** command to enable the debugging.

Use the **undo debug** command to disable the debugging.

XE IP PBX provides abundant debugging functions for troubleshooting.

It is recommended not to use the **debugging all** command, because large amount of debugging information reduces the system efficiency, or even causes collapse of the system when you use this command. However, the **undo debugging all** command offers you great convenience for disabling all the debugging at one time.

Related command: **display debugging**.

Example

Enable the debugging for IP Packet information.

```
<XE> debugging ip packet
IP packet debugging switch is on.
```

3.1.2 display debugging

Syntax

display debugging [**interface** *interface-type interface-number*] [*module-name*]

View

Any view

Parameter

module-name: Module name.

interface-type: Interface type.

interface-number: Interface number.

Description

Use the **display debugging** command to display the debugging that is already enabled.

By default, this command has no parameter and enables the debugging for all information.

Related command: **debugging**.

Example

Display all enabled debugging.

```
<XE> display debugging
IP packet debugging switch is on.
```

3.1.3 display diagnostic-information

Syntax

display diagnostic-information

View

Any view

Parameter

None

Description

Use the **display diagnostic-information** command to display the current system information of all the modules.

You can use the **display diagnostic-information** command to collect all of the running information on each active module, making it easy to locate problems.

Example

Display the diagnostic information.

```
<XE> display diagnostic-information
```

3.1.4 ping

Syntax

ping [-**a** *X.X.X.X* | **-c** *count* | **-d** | **-h** *ttl_value* | -**i** { *interface-type interface-number* } | **ip** | **-n** | **- p** *pattern* | **-q** | **-r** | **-s** *packetsize* | **-t** *timeout* | **-v** | -**tos** *value*] * *host*

View

Any view

Parameter

-**a** *X.X.X.X*: The Source IP address configured to send the ICMP ECHO-REQUEST packet.

-**c** *count*: Number of times an ICMP ECHO-REQUEST packet is sent, in the range of 1 to 4294967295.

-**d**: Sets DEBUG as the mode of socket.

-**h** *ttl_value*: TTL_value within the range of 1 to 255.

-**i**: Sets the interface that sends the ICMP ECHO-REQUEST packet and specifies the TTL value to 1, which is used for testing directly connected devices.

interface-type: Interface type.

interface-number: Interface number.

-**n**: Uses the host name directly as the IP address without domain name resolution.

-**p**: *pattern*: The padding byte of the ICMP ECHO-REQUEST packet in hex. It is in the range of 0 to FFFFFFFF, for example, -**p** ff means padding the packet all with ff.

-**q**: Displays the statistics only.

-**r**: Records routing.

-**s** *packetsize*: The size of ECHO-REQUEST packet (excluding IP and ICMP packet header) in byte, in the range of 20 to 8100.

-**t** *timeout*: Timeout time of waiting for ECHO-RESPONSE after sending ECHO-REQUEST in milliseconds, within the range of 0 to 65535.

-**v**: Non-ECHO-RESPONSE ICMP packet received.

-**tos**: Sets the TOS value of the ECHO-REQUEST packet.

host: Destination host field or IP address.

ip: IP protocol used.

Description

Use the **ping** command to check the connectivity with IP network and the reachability of the host.

The default settings of the above parameters are:

The number of times of sending ECHO-REQUEST packet is 5.

The mode of socket is non-DEBUG.

The system determines whether the *host* is an IP address; if not, domain name resolution will be performed.

Pad the packet from 0x01 to 0x09 and then repeat.

Display all the information including statistics.

No route is recorded.

The size of the ECHO-REQUEST packet is 56 bytes.

The timeout time for ECHO-RESPONSE packet is 2000 ms.

Non-ECHO-RESPONSE ICMP packets are not displayed.

The ping process is: a host sends ICMP ECHO-REQUEST packet to destination. If the connection works, the destination host receives the ICMP ECHO-REQUEST packet and responds to the source host with the ICMP ECHO-REPLY packet.

Use the **ping** command to test the network connectivity for troubleshooting. The output information includes:

- Response of a destination to every ECHO-REQUEST packet. Bytes of the reply packet, packet number, TTL, and the response time. The “Request time out” is displayed if no reply packet is received in timeout time.
- The final statistics includes number of the transmitted packets, number of the received packets, packet loss ratio, and minimum, average and maximum roundtrip times.

If the packet is transmitted at a slow rate, you can enlarge the timeout time for reply packets.

Related command: **tracert**.

Example

Ping a host with an IP address of 202.38.160.244 to check the connectivity.

```
<XE> ping 202.38.160.244
ping 202.38.160.244 : 56 data bytes , press CTRL-C to break
Reply from 202.38.160.244 : bytes=56 sequence=1 ttl=255 time = 1ms
Reply from 202.38.160.244 : bytes=56 sequence=2 ttl=255 time = 2ms
```

```
Reply from 202.38.160.244 : bytes=56 sequence=3 ttl=255 time = 1ms
Reply from 202.38.160.244 : bytes=56 sequence=4 ttl=255 time = 3ms
Reply from 202.38.160.244 : bytes=56 sequence=5 ttl=255 time = 2ms
--202.38.160.244 ping statistics--
5 packets transmitted
5 packets received
0% packet loss
round-trip min/avg/max = 1/2/3 ms
```

3.1.5 reboot

Syntax

reboot

View

User view

Parameter

None

Description

Use the **reboot** command to restart your XE IP PBX.

Executing this command has the same effect with the action by powering off the XE IP PBX and powering it on. However, it provides users convenience to reboot the XE IP PBX from a remote site.

You are recommended not to use this command because rebooting the machine will cause transient network unavailability. Save the configuration file before rebooting the IP PBX, otherwise the configurations you just made cannot survive a reboot.

Example

Reboot IP PBX.

```
<XE> reboot
This command will reboot the system. The current configuration has not been
saved and will be lost if you continue. Continue? [Y/N]:y
```

3.1.6 tracert

Syntax

tracert [**-a** *X.X.X.X* | **-f** *first_TTL* | **-m** *max_TTL* | **-p** *port* | **-q** *nqueries* | **vpn-instance** *vpn-instance-name* | **-w** *timeout*] * *host*

View

Any view

Parameter

-**a**: Specifies the source address of the packet configured by the **tracert** command. *X.X.X.X* specifies the IP address of the tracert packet to be configured in the format of *X.X.X.X*. It must be an address of a local interface.

-**f**: Sets the initial TTL. *first_TTL* represents the initial TTL, ranging from 0 to the maximum TTL.

-**m**: Sets the maximum TTL. *max_TTL* represents the maximum TTL, which is larger than the initial TTL.

-**p**: Sets the UDP port number. *port* is an integer, which is the port number of the destination host. You do not need to change this argument.

-**q**: Sets the number of the query packets. *nqueries* is an integer, which is the number of the query packets sent every time. This number is greater than 0.

-**w**: Sets the timeout time. *timeout* is an integer, which represents the timeout time of the IP packet in seconds. The timeout time is greater than 0.

host: IP address of the destination host.

Description

Use the **tracert** command to test the gateways through which the packet travels from the sender host to destination. It is used to check the network connectivity and locate the network faults.

The default settings of the above parameter are:

–**a** is not selected.

first_TTL is 1.

max_TTL is 30.

port is 33434.

nqueries is 3.

timeout is 5 seconds.

The following is how a tracert operates:

1) Tracert sends a packet with TTL value of 1.
2) The fist hop sends back an ICMP TTL Expired message.
3) Tracert resends the packet with TTL value of 2.
4) The second hop sends back an ICMP TTL Expired message when the packet arrives.

This process continues till the packet reaches its destination. The route is determined by examining the ICMP Time Exceeded messages sent back by intermediate routers.

After you have executed the **ping** command to learn that there is a network problem, you can use the **tracert** command to locate the problem.

The output of the **tracert** command includes all the IP addresses of gateways through which the packet travels. If the gateway times out, then the output is "***".

Example

Trace the route.

```
<XE> tracert 18.26.0.115
tracert to allspice.lcs.mit.edu (18.26.0.115), 30 hops max
1 helios.ee.lbl.gov (128.3.112.1) 0 ms 0 ms 0 ms
2 lilac-dmc.Berkeley.EDU (128.32.216.1) 19 ms 19 ms 19 ms
3 lilac-dmc.Berkeley.EDU (128.32.216.1) 39 ms 19 ms 19 ms
4 ccngw-ner-cc.Berkeley.EDU (128.32.136.23) 19 ms 39 ms 39 ms
5 ccn-nerif22.Berkeley.EDU (128.32.168.22) 20 ms 39 ms 39 ms
6 128.32.197.4 (128.32.197.4) 59 ms 119 ms 39 ms
7 131.119.2.5 (131.119.2.5) 59 ms 59 ms 39 ms
8 129.140.70.13 (129.140.70.13) 80 ms 79 ms 99 ms
9 129.140.71.6 (129.140.71.6) 139 ms 139 ms 159 ms
10 129.140.81.7 (129.140.81.7) 199 ms 180 ms 300 ms
11 129.140.72.17 (129.140.72.17) 300 ms 239 ms 239 ms
12 * * *
13 128.121.54.72 (128.121.54.72) 259 ms 499 ms 279 ms
14 * * *
15 * * *
16 * * *
17 * * *
18 ALLSPICE.LCS.MIT.EDU (18.26.0.115) 339 ms 279 ms 279 ms
```

3.2 Information Processing Commands

3.2.1 display channel

Syntax

display channel [*channel-number* | *channel-name*]

View

Any view

Parameter

channel-number: Channel number which can be from 0 to 9, that means the system can have 10 channels.

channel-name: Channel name.

Table 3-1 Channel names and their associated channel numbers

Channel name	Channel number
channel6	6
channel7	7
channel8	8
channel9	9
console	0
logbuffer	4
loghost	2
monitor	1
snmpagent	5
trapbuffer	3

Description

Use the **display channel** command to display channel information.

All the channel settings are displayed when you execute the **display channel** command without any parameter.

Example

Display the information of channel 0.

```
<XE> display channel 0
channel number:0, channel name:console
MODU_ID NAME ENABLE LOG LEVEL  ENABLE TRAP LEVEL  ENABLE DEBUG LEVEL
ffff0000 all   Y     warning   Y      debugging  Y     debugging
```

3.2.2 display info-center

Syntax

display info-center

View

Any view

Parameter

None

Description

Use the **display info-center** command to display the information recorded in the information center.

Related command: **info-center enable**, **info-center loghost**, **info-center logbuffer**, **info-center trapbuffer**, **info-center console channel**, **info-center monitor channel**.

Example

Display the information recorded in the information center.

```
<XE> display info-center
Information Center: enabled
Log host:
Console:
        channel number : 0, channel name : console
Monitor:
        channel number : 1, channel name : monitor
SNMP Agent:
        channel number : 5, channel name : snmpagent
Log buffer:
        enabled,max buffer size 1024, current buffer size 256,
current messages 89, channel number : 4, channel name : logbuffer
dropped messages 0, overwrote messages 0
Trap buffer:
        enabled,max buffer size 1024, current buffer size 256,
current messages 0, channel number:3, channel name:trapbuffer
dropped messages 0, overwrote messages 0
Information timestamp setting:
        log - date, trap - date, debug - boot
 Sent messages = 89, Received messages = 89
```

3.2.3 display logbuffer

Syntax

display logbuffer [**size** *size-value* | **summary**] [**level** *level-number*] [| [**begin** | **include** | **exclude**] *string*]

View

Any view

Parameter

size: Specifies the number of information entries in log buffer.

size-value: Displays the number of information entries.

summary: Summary of the log buffer.

level: Displays the specified level of information only.

level-number: Specifies the level in the range of 1 to 8.

|: Uses the regular expression to filter the displayed information.

begin: Displays the information beginning with specific string.

include: Displays the information containing the string.

exclude: Displays the information without the string.

string: Regular expression.

Description

Use the **display logbuffer** command to display the log buffer information.

By default, the system displays all the log buffer information using the command without any parameter.

If the size of the current log buffer is smaller than the user-specified *sizevalue*, all of the current log will be displayed.

Related command: **info-center enable**, **info-center logbuffer**, **display info-center**.

Example

Display the log buffer information.

```
<XE> display logbuffer
Logging buffer configuration and contents:enabled
Allowed max buffer size : 1024
Actual buffer size : 512
Channel number : 4 , Channel name : logbuffer
Dropped messages : 0
Overwritten messages : 0
Current messages : 18

%Apr 21 12:38:08 2006 H3C IC/7/SYS_RESTART:
System restarted --
H3C Comware Software
Copyright (c) 2004-2007 Hangzhou H3C Technology Co., Ltd.
%Apr 21 12:38:17 2006 H3C PHY/2/PHY:    Ethernet0/0: change status to up
%Apr 21 12:39:57 2006 H3C SHELL/5/LOGIN: Console login from con0
%Apr 21 12:49:58 2006 H3C HWCM/5/EXIT: exit from configure mode
%Apr 21 12:49:58 2006 H3C SHELL/5/LOGOUT: Console logout from con0
%Apr 21 13:40:19 2006 H3C SHELL/5/LOGIN: Console login from con0
```

3.2.4 display schedule reboot

Syntax

display schedule reboot

View

Any view

Parameter

None

Description

Use the **display schedule reboot** command to view the parameters of the terminal service of schedule reboot.

Related command: **reboot**, **schedule reboot at**, **schedule reboot delay**, **undo schedule reboot**.

Example

Display the parameters of **schedule reboot** set on XE IP PBX.

```
<XE> display schedule reboot
Reboot system at 16:00:00 2002/11/1 (in 2 hours and 5 minutes).
```

3.2.5 display trapbuffer

Syntax

display trapbuffer [**size** *sizeval*]

View

Any view

Parameter

size: Specifies the number of the information entries in the log buffer.

sizeval: Number of the information entries to be displayed.

Description

Use the **display trapbuffer** command to display the trap buffer information.

By default, the command without any parameter displays all the trap buffer information.

If the size of the current trap buffer is smaller than the user-specified *sizeval*, all of the current trap information will be displayed.

Related command: **info-center enable**, **info-center trapbuffer**, **display info-center**.

Example

Display the trap buffer information.

```
<XE> display trapbuffer
Trapping Buffer Configuration and contents:
enabled
allowed max buffer size : 1024
actual buffer size : 256
channel number : 3 , channel name : trapbuf
dropped messages : 0
overwrote messages : 0
current messages : 0
```

Display 23 entries of information in the trap buffer.

```
<XE> display trapbuffer size 23
Trapping Buffer Configuration and contents:
enabled
allowed max buffer size : 1024
actual buffer size : 256
channel number : 3 , channel name : trapbuf
dropped messages : 0
overwrote messages : 0
current messages : 0
```

3.2.6 info-center channel

Syntax

info-center channel *channel-number* **name** *channel-name*

View

System view

Parameter

channel-number: Channel number in the range of 0 to 9, which means the system can have 10 channels.

channel-name: Channel name up to 30 characters and it cannot be “-”, “/”, or “\” characters.

Description

Use the **info-center channel** command to name the channels.

Do not give channels the same name.

Example

Name the channel 0 execconsole.

```
[XE] info-center channel 0 name execconsole
```

3.2.7 info-center console channel

Syntax

info-center console channel { *channel-number* | *channel-name* }

undo info-center console channel

View

System view

Parameter

channel-number: Channel number from 0 to 9, which means the system can have 10 channels.

channel-name: Channel name.

Description

Use the **info-center console channel** command to output information to console and specify the channel to be used.

Use the **undo info-center console channel** command to remove the current configuration.

By default, no log information is sent to the console.

The command is effective only after the system log function is enabled.

Related command: **info-center enable**, **display info-center**.

Example

Send information to console and specify the channel to be used.

```
[XE] info-center console channel console
```

3.2.8 info-center enable

Syntax

info-center enable

undo info-center enable

View

System view

Parameter

None

Description

Use the **info-center enable** command to enable the information center.

Use the **undo info-center enable** command to disable the information center.

By default, the information center is enabled.

The system can send system information to log host and console after enabling the information center.

Related command: **info-center loghost**, **info-center logbuffer**, **info-center trapbuffer**, **info-center console channel**, **info-center monitor channel**, **display info-center**.

Example

Enable the information center.

```
[XE] info-center enable
% information center is enabled
```

3.2.9 info-center logbuffer

Syntax

info-center logbuffer [**channel** { *channel-number* | *channel-name* } | **size** *buffersize*] *

undo info-center logbuffer [**channel** | **size**]

View

System view

Parameter

channel: Specifies the channel through which the log buffer sends information.

channel-number: Channel number from 0 to 9, which means the system can have 10 channels.

channel-name: Channel name.

size: Specifies the size of the log buffer.

buffersize: Size of the log buffer (the number of information entries to be stored).

Description

Use the **info-center logbuffer** command to enable the log buffer, set the channel number through which log information in output, and specify the size of the log buffer.

Use the **undo info-center logbuffer** command to remove the current configuration.

By default, information is sent to log buffer and the size of the log buffer is 512.

This command is effective only after the information center function is enabled.

You can enable the information to be output to a channel by specifying the channel number in log buffer.

Related command: **info-center enable**, **display info-center**, **display info-center logbuffer**.

Example

Enable the XE IP PBX to send information to log buffer and set the size of the log buffer to 50.

```
[XE] info-center logbuffer size 50
```

3.2.10 info-center loghost

Syntax

info-center loghost *X.X.X.X* [**channel** { *channel-number* | *channel-name* } | **facility** *local-number* | **language** { **chinese** | **english** }] *

undo info-center loghost *X.X.X.X*

View

System view

Parameter

X.X.X.X: IP address of the log host.

channel: Information channel of the log host.

channel-number: Channel number from 0 to 9, which means the system can have 10 channels.

channel-name: Channel name.

facility: Recording facility of the log host.

local-number: Recording facility of the log host within the range of local0 to local7.

language: Language which is used by the log.

chinese, **english**: Log language. You can shift between Chinese and English.

Description

Use the **info-center loghost** command to configure the system to send output to log host.

Use the **undo info-center loghost** command to remove the current configuration.

By default, the system does not send output to log host.

If not specified, the channel of log host uses channel 2 which is named loghost. The *local-number* uses local7 and the language is **english**.

This command is effective only after the information center function is enabled.

By configuring the IP address of a log host, you can send information to this log host. Up to four log hosts can be configured..

Related command: **info-center enable**, **display info-center**.

Example

Enable the XE IP PBX to send information to UNIX station with an IP address of 202.38.160.1.

```
[XE] info-center loghost 202.38.160.1
```

3.2.11 info-center loghost source

Syntax

info-center loghost source *interface-type interface-number* [*subinterface-type*]

undo info-center loghost source

View

System view

Parameter

interface-type: Interface type.

interface-number: Interface number.

subinterface-type: Subinterface type.

Description

Use the **info-center loghost source** command to specify the source address of the packet destined to log host.

Use the **undo info-center loghost source** to remove the current configuration.

The default address of log information from an XE IP PBX is the IP address of the interface that sends the log information. If you want to change the source address, use the **info-center loghost source** command. You can judge from which XE IP PBX the log information is sent by setting different source addresses for different XE IP PBXs, which is convenient for searching the received log information.

Example

Use the IP address of the Loopback 0 interface as the source address of the log information packet.

```
[XE] interface loopback 0
[XE-LoopBack0] ip address 1.1.1.1 255.255.255.0
[XE-LoopBack0] quit
[XE] info-center loghost source loopback 0
```

3.2.12 info-center monitor channel

Syntax

info-center monitor channel { *channel-number* | *channel-name* }

undo info-center monitor channel

View

System view

Parameter

channel-number: Channel number from 0 to 9, which means the system can have 10 channels.

channel-name: Channel name.

Description

Use the **info-center monitor channel** command to configure the system to send information to the Telnet terminal or dumb terminal and specify the channel to be used.

Use the **undo info-center monitor channel** command to remove the current configuration.

By default, the system sends information to the Telnet terminal or dumb terminal.

This command is effective only after the information center function is enabled.

Related command: **info-center enable**, **display info-center**.

Example

Configure the system to send information to the Telnet terminal or dumb terminal and specify the channel to be used.

```
[XE] info-center monitor channel monitor
```

3.2.13 info-center snmp channel

Syntax

info-center snmp channel { *channel-number* | *channel-name* }

undo info-center snmp channel

View

System view

Parameter

channel-number: Channel number from 0 to 9, which means the system can have 10 channels.

channel-name: Channel name.

Description

Use the **info-center snmp channel** command to configure the channel for SNMP.

Use the **undo info-center snmp channel** command to remove the current configuration.

By default, channel 5 is used.

Related command: **display snmp-agent statistics**.

Example

Configure channel 6 to send SNMP information.

```
[XE] info-center snmp channel 6
```

3.2.14 info-center source

Syntax

info-center source { *module-name* | **default** } { **channel** { *channel-number* | *channel-name*} } [**log** { **state** { **on** | **off** } | **level** *severity* }* | **trap** { **state** { **on** | **off** } | **level** *severity* } * | **debug** { **state** { **on** | **off** } | **level** *severity* }*]*

undo info-center source { *module-name* | **default** } { **channel** { *channel-number* | *channel-name* }

View

System view

Parameter

module-name: Module name.

default: Sets the default information records.

channel-number: Specifies the channel number.

channel-name: Specifies the channel name.

log: Log information.

trap: Trap information.

debug: Debugging information.

on: Enables the information output.

off: Disables the information output.

level: Specifies the level of the information. The information at a level greater than *severity* cannot be sent.

severity: Level of information which is grouped into 8 levels according to severity or emergency. As shown in the following table, a packet with a lower severity level is more urgent. Severity level 1 means emergency and level 8 means debugging.

Table 3-2 Severity levels defined in syslog

Severity	Meaning
emergencies	The extremely emergent errors
alerts	The errors that need to be corrected immediately
critical	Critical errors
errors	The errors that need to be concerned but not critical
warnings	Warning, there might exist some kinds of errors
notifications	The information should be concerned
informational	Common prompt
debugging	Debugging information

*: indicates multiple choices can be selected, ranging from one to all.

Description

Use the **info-center source** command to add information entries to a channel.

Use the **undo info-center source** command to delete the information entries in the channel.

By default, for a particular module:

The status of log information is **on** and the permitted information level is **informational**. The status of the trap information is **on** and the permitted information level is **informational**.

The state of debugging information is **off**.

At present, system allocates one channel for each output direction, as shown in the following table:

Output direction	Channel number	Default channel name
Console	0	console
Monitor terminal	1	monitor
Log host	2	loghost

Trap buffer	3	trapbuffer
Log buffer	4	logbuffer
snmp	5	snmpagent

Each channel has a default information entry for which the default name and number are **default** and 0xffff0000. The default setting log, trap and debugging information may vary with channels. If a module has no specific configuration entry in a channel, it uses this default configuration entry.

Example

Enable the log information of IP module in SNMP channel and specify the permitted highest level of output information as **emergence**.

```
[XE] info-center source ip channel snmpagent log level emergencies
```

Remove the settings of CMD module in SNMP channel.

```
[XE] undo info-center source cmd channel snmp
```

3.2.15 info-center timestamp

Syntax

info-center timestamp { **trap** | **debugging** | **log** } { **boot** | **date** | **none** }

undo info-center timestamp { **trap** | **debugging** | **log** }

View

System view

Parameter

trap: Trap information.

debugging: Debugging information.

log: Log information.

boot: Post-booting time that the system experiences. It is in the format of xxxxxx.yyyyyy, with xxxxxx being the high-order 32 bits and yyyyyy the low-order 32 bits of the passed milliseconds.

date: Current system date and time, in the format of yyyy/mm/dd-hh:mm:ss in Chinese and mm/dd/yyyy-hh:mm:ss in English.

none: No timestamp format.

Description

Use the **info-center timestamp** command to set the timestamp format of the output debugging/trap/log information.

Use the **undo info-center timestamp** command to remove the current configuration.

By default, the **date** timestamp is used in all types of information.

Example

Set the timestamp of trap information to **boot**.

```
[XE] info-center timestamp trap boot
```

3.2.16 info-center trapbuffer

Syntax

info-center trapbuffer [**channel** { *channel-number* | *channel-name* } | **size** *buffersize*] *

undo info-center trapbuffer [**channel** | **size**]

View

System view

Parameter

channel: S Specifies the channel through which the trap buffer sends information.

channel-number: Channel number from 0 to 9, which means the system can have 10 channels.

channel-name: Channel name.

size: Size of the trap buffer.

buffersize: Size of the trap buffer (the number of information entries that can be stored).

Description

Use the **info-center trapbuffer** command to enable the trap buffer and set the channel number through which trap information in output and specify the size of the trap buffer.

Use the **undo info-center trapbuffer** command to remove the current configuration.

By default, it is allowed to send information to trap buffer and the size for trap buffer is 256.

This command is effective only after the information center function is enabled.

You can send information to trap buffer by specifying the size of the trap buffer.

Related command: **info-center enable**, **display info-center**, **display info-center trapbuffer**.

Example

Enable the XE IP PBX to send information to trap buffer and set the size of trap buffer to 30.

```
[XE] info-center trapbuffer size 30
```

3.2.17 reset logbuffer

Syntax

reset logbuffer

View

User view

Parameter

None

Description

Use the **reset logbuffer** command to clear the information in log buffer.

Example

Clear the information in log buffer.

```
<XE> reset logbuffer
```

3.2.18 reset trapbuffer

Syntax

reset trapbuffer

View

User view

Parameter

None

Description

Use the **reset trapbuffer** command to clear the information in trap buffer.

Example

Clear the information in trap buffer.

```
<XE> reset trapbuffer
```

3.2.19 schedule reboot at

Syntax

schedule reboot at *hh:mm* [*yyyy/mm/dd*]

View

User view

Parameter

hh:mm: Time when the XE IP PBX reboots. *hh* ranges from 0 to 23 and *mm* ranges from 0 to 59.

yyyy/mm/dd: Date when XE IP PBX reboots. *yyyy* ranges from 2000 to 2099, *mm* can be from 1 to 12, and *dd* relies on the exact month.

Description

Use the **schedule reboot at** command to schedule the reboot of the XE IP PBX and set the specific data and time.

By default, the reboot of the XE IP PBX is not scheduled.

If you set the specific date parameter which represents a future time using the **schedule reboot at** command, the XE IP PBX will reboot at the specified time within an error of one minute.

If no particular date is specified, two cases are involved:

- If the configured time is later than the current time, the XE IP PBX reboots at the time on that day.
- If the configured time is earlier than the current time, the XE IP PBX reboots at the time on the next day.

It should be noted that the configured date must not exceed the current date more than 30 days. Additionally, after you have configured the command, the system will prompt you to input the correct confirmation. The configuration is valid only after you enter **Y** or **y**. If you executed the command before, the new configuration overwrites the previous one.

Moreover, if you configure the **clock** command after you have configured the **schedule reboot at** command, the previous parameters of **schedule reboot at** are invalidated.

Related command: **reboot**, **schedule reboot delay**, **undo schedule reboot**, **display schedule reboot**.

Example

Configure the XE IP PBX to reboot at 22:00 on the day when you perform the setting (the current time is 15:50).

```
<XE> schedule reboot at 22:00
Reboot scheduled for 22:00:00 UTC 2002/11/18 (in 6 hours and 10 minutes)
Proceed with reboot? [Y/N]:y
```

3.2.20 schedule reboot delay

Syntax

schedule reboot delay { *hhh:mm* | *mmm* }

undo schedule reboot

View

User view

Parameter

hhh:mm: Time waiting for the XE IP PBX to reboot, in the format of *hhh*:*mm*. *hhh* ranges from 0 to 720 and *mm* ranges from 0 to 59.

mmm: Time waiting for the XE IP PBX to reboot, in the format of absolute value of minutes in the range of 0 to 43200.

Description

Use the **schedule reboot delay** command to schedule the reboot of the XE IP PBX and set the waiting delay.

Use the **undo schedule reboot** command to disable the function.

You can set the waiting delay of reboot for the XE IP PBX in two format: *hhh*:*mm* and absolute minutes. The total minutes should be less than 30 ×24 × 60, that is, 30 days.

After you configure the command, the system will prompt you to input the correct confirmation. The settings take effect only after you type in **Y** or **y**. If you executed the command before, the new configuration overwrites the previous one.

Moreover, if you configure the **clock** command after you have configured the **schedule reboot delay** command, the previous parameters of **schedule reboot delay** are invalidated.

Related command: **reboot**, **schedule reboot at**, **undo schedule reboot**, **display schedule reboot**.

Example

Set the XE IP PBX to reboot in 88 minutes (the current time is 21:32).

```
<XE> schedule reboot delay 88
Reboot scheduled for 23:00:00 UTC 2002/11/1 (in 1 hours and 28 minutes)
Proceed with reboot? [Y/N]:y
```

3.2.21 service modem-callback

Syntax

service modem-callback

undo service modem-callback

View

System view

Parameter

None

Description

Use the **service modem-callback** command to enable the callback function.

Use the **undo service modem-callback** command to disable the callback function.

By default, the callback function is disabled.

Example

Enable the callback function.

```
[XE] service modem-callback
```

3.2.22 terminal debugging

Syntax

terminal debugging

undo terminal debugging

View

User view

Parameter

None

Description

Use the **terminal debugging** command to enable debugging for terminal display.

Use the **undo terminal debugging** command to disable the debugging.

By default, the terminal display function is disabled.

Related command: **debugging**.

Example

Enable the debugging for terminal display.

```
<XE> terminal debugging
```

3.2.23 terminal logging

Syntax

terminal logging

undo terminal logging

View

User view

Parameter

None

Description

Use the **terminal logging** command to enable the terminal to display log information.

Use the **undo terminal logging** command to disable the function.

By default, the system is configured to enable the terminal to display log information.

Example

Disable the terminal from displaying log information.

```
<XE> undo terminal logging
```

3.2.24 terminal monitor

Syntax

terminal monitor

undo terminal monitor

View

User view

Parameter

None

Description

Use the **terminal monitor** command to enable the terminal to display the debugging/log/trap information sent by information center.

Use the **undo terminal monitor** command to disable the function.

By default, the function is enabled for console users but disabled for the terminal users.

This command only affects the current terminal where the command is input. The **undo terminal monitor** command is equivalent to the combination of the **undo terminal**

debugging, **undo terminal logging**, and **undo terminal trapping** commands. That means all the debugging/log/trap information is not displayed on the current terminal. In case of enabling the **terminal monitor** command, you can use the **terminal debugging/undo terminal debugging**, **terminal logging/undo terminal logging**, and **terminal trapping/undo terminal trapping** commands to enable/disable debugging/log/trap information.

Example

Disable the terminal monitor.

```
<XE> undo terminal monitor
```

3.2.25 terminal trapping

Syntax

terminal trapping

undo terminal trapping

View

User view

Parameter

None

Description

Use the **terminal trapping** command to enable the terminal to display trap information..

Use the **undo terminal trapping** command to disable the function.

By default, the system is configured to display the trap information.

Example

Disable the terminal from displaying trap information.

```
<XE> undo terminal trapping
```

3.2.26 upgrade

Syntax

upgrade bootrom [**full**]

View

User view

Parameter

full: Upgrades Boot ROM globally.

Description

Use the **upgrade** command to upgrade Boot ROM

Example

Upgrade Boot ROM.

```
[XE] upgrade bootrom
```

3.3 Digital Label Information Commands

3.3.1 display device manuinfo

Syntax

display device manuinfo

View

Any view

Parameter

None

Description

Use the **display device manuinfo** command to display the digital label information of a device. Refer to Table 3-3for description on the fields of digital label information.

Table 3-3 Description on the digital label information

Field	Description
DEVICE_NAME	Device name
DEVICE_SERIAL_NUMBER	OEM serial number
MAC_ADDRESS	Starting MAC address
MANUFACTURING_DATE	Manufacturing date
VENDOR_NAME	Vendor name

Example

Display the digital label information of a device.

```
[XE]display device manuinfo
DEVICE_NAME: S3600-28P HI
```

```
DEVICE_SERIAL_NUMBER: 210235A045B05B004350
MAC_ADDRESS: 00e0-fc00-5600
MANUFACTURING_DATE: 2006-04-13
```

Chapter 4 File Management Commands

4.1 File System Commands

4.1.1 bootfile backup

Syntax

bootfile backup { *backup-bootfile-name* }

View

System view

Parameter

backup-bootfile-name: Backup boot file for booting the XE IP PBX.

Description

Use the **bootfile backup** command to specify the backup boot file.

Three bootfiles are defined in the system by default: main boot file, backup boot file, and secure boot file. The system uses them in the following order:

- Main boot file, with the default name being main.bin and file type being M, is the default file for system boot.
- Backup boot file, with the default name being backup.bin and file type being B, is the boot file used in case of the boot failure using the main boot file.
- Secure boot file, with the default name being secure.bin and file type being S, is the boot file used in case of the boot failure using the backup boot file. If the boot attempts using all these files fail, the system prompts the boot failure.

This command is supported only by the XE200.

For the related commands, see **dir**, **bootfile dir**, and **bootfile main**.

⚠ **Caution:**

Only XE IP PBX 200 supports this command.

Example

Specify the backup boot file.

```
[XE] bootfile backup router.bin
Set backup boot file successfully!
```

Display information on the boot files in the Flash.

```
[XE] bootfile dir
Aviliable boot file(s):
'M' = MAIN, 'B' = BACKUP, 'S' = SECURE
------------------------------------------------------------
 [No.]  [Type]      [Date]   [Time]  [Size] [Name]
------------------------------------------------------------
   1      N/A  Mar/15/2004 18:09:00 5556068 Main.bin
   1      N/A  Mar/15/2004 18:09:00 5556068 Backup.bin
   1        S  Mar/15/2004 18:09:00 5556068 Secure.bin
------------------------------------------------------------
```

4.1.2 bootfile dir

Syntax

bootfile dir

View

System view

Parameter

None

Description

Using the **bootfile dir** command, you can view the information about all the boot files in the Flash, including file type, date, time, file size, and file name.

This command is supported only by the XE200.

For the related commands, see **dir**, **bootfile main**, and **bootfile backup**.

⚠ **Caution:**

Only XE IP PBX 200 supports this command.

Example

Display the information about all the boot files in the Flash.

```
[XE] bootfile dir
```

```
Aviliable boot file(s):
'M' = MAIN, 'B' = BACKUP, 'S' = SECURE
-------------------------------------------------------------
 [No.]  [Type]      [Date]      [Time]    [Size]    [Name]
-------------------------------------------------------------
   1        M      Mar/15/2004   18:09:00 5556068   Main.bin
   1        B      Mar/15/2004   18:09:00 5556068   Backup.bin
   1        S      Mar/15/2004   18:09:00 5556068   Secure.bin
-------------------------------------------------------------
```

4.1.3 bootfile main

Syntax

bootfile main { *main-bootfile-name* }

View

System view

Parameter

main-bootfile-name: Main boot file for booting the XE IP PBX.

Description

Using the **bootfile main** command, you can specify the main boot file.

Three bootfiles are defined in the system by default: main boot file, backup boot file, and secure boot file. The system uses them in the following order:

- Main boot file, with the default name being main.bin and file type being M, is the default file for system boot;
- Backup boot file, with the default name being backup.bin and file type being B, is the boot file used in case of the boot failure using the main boot file;
- Secure boot file, with the default name being secure.bin and file type being S, is the boot file used in case of the boot failure using the backup boot file. If the boot attempts using all these files fail, the system prompts the boot failure.

This command is only supported by the XE IP PBXs.

For the related commands, see **dir**, **bootfile dir**, and **bootfile backup**.

⚠ **Caution:**

Only XE IP PBX 200 supports this command.

Example

Specify the backup boot file.

```
[XE] bootfile backup router.bin
Set backup boot file successfully!
```

Display information on the boot files in the Flash.

```
[XE] bootfile dir
Aviliable boot file(s):
'M' = MAIN, 'B' = BACKUP, 'S' = SECURE
------------------------------------------------------------
 [No.]  [Type]      [Date]   [Time]  [Size] [Name]
------------------------------------------------------------
   1     N/A  Mar/15/2004 18:09:00 5556068 Main.bin
   1        B  Mar/15/2004 18:09:00 5556068 Backup.bin
   1        S  Mar/15/2004 18:09:00 5556068 Secure.bin
------------------------------------------------------------
```

4.1.4 cd

Syntax

cd { *directory* | **flash:** }

View

User view

Parameter

directory: Name of the destination directory.

flash: Device name.

Description

Use the **cd** command to change the current operating directory of the XE IP PBX to a specified existing directory.

By default, it is “flash”.

Example

Change the current operating directory of the XE IP PBX to test.

```
<XE> pwd
flash:
<XE> cd test
<XE> pwd
```

```
flash:/test
```

Return the upper directory.

```
<XE> pwd
flash:
<XE> cd test
<XE> pwd
flash:/test
<XE> cd ..
<XE> pwd
flash:
```

4.1.5 copy

Syntax

copy *filename_source filename_dest*

View

User view

Parameter

filename_source: Name of the source file.

filename_dest: Name of the destination file or directory.

Description

Use the **copy** command to copy a file.

If the name of destination file is same with that of an existing directory, the file will be copied to the directory. If the name of the destination file is the same with that of an existing file, a prompt will appear asking whether to overwrite the existing file.

Example

```
<XE> pwd
flash:
<XE> dir
Directory of flash:/

   0   -rw-   8429335  Oct 10 2002 10:10:10   system
   1   -rw-         4  Sep 11 2052 20:48:59   snmpboots
   2   drw-         -  Sep 19 2052 11:38:56   anchun
   3   -rw-       957  Nov 06 2052 14:04:08   config.cfg
   4   drw-         -  Mar 17 2005 15:03:42   gg
```

```
   5   drw-         -  Mar 17 2005 15:22:51   backup

15621 KB total (1611 KB free)
```

Copy the config.cfg from Flash to backup.

```
<XE> copy config.cfg backup
Copy flash:/ config.cfg to flash:/backup?[Y/N]:y
100%  complete
%Copy file flash:/ config.cfg to flash:/backup...Done.
<XE> cd backup
<XE> dir
Directory of flash:/backup/

   0   -rw-       957  Mar 17 2005 16:15:40   config.cfg

15621 KB total (1610 KB free)
```

4.1.6 delete

Syntax

delete /**unreserved** *filename*

View

User view

Parameter

/**unreserved**: Deletes the specified file permanently, and the deleted file can never be restored.

filename: Name of the file to be deleted.

Description

Use the **delete** command to delete the specified file restored in the storage device of the XE IP PBX.

The **delete** command supports the “*” wildcard.

Using the **delete** command without parameters is to removed a file to recycle bin and you can be restore it with the **undelete** command.

If you want to delete the file from the recycle bin, use **reset recycle-bin** *filename* command.

Note that if you delete two files with same name but under different directories, only the last file maintained in the recycle bin.

If the **delete** command is used with the parameter (/**unreserved**), the specified file will never be restored.

The **dir** command does not display the information of deleted files. However, by using the **dir**/**all** command, the information of all files, including the files in recycle bin, will be displayed.

⚠ **Caution:**

If there is only one application file (system file) in the system, you are not allowed to delete the file.

Example

Delete the file flash:/test/test.txt.

```
<XE> delete flash:/test/test.txt
Delete flash:/test/test.txt?[Y/N]:y
<XE>
```

4.1.7 dir

Syntax

dir [/ **all** | *string* | **flash:**]

View

User view

Parameter

/all: Displays all the files (including the ones deleted).

flash:: Device name.

string: The name of the file or directory to be displayed.

Description

Use the **dir** command to display the information about the specified file or directory in the storage device of the XE IP PBX.

By default, this command displays the file information under the current directory.

This command supports "*" wildcard.

Use the **dir /all** command to display the information about all the files, including the deleted files. The names of the deleted files are denoted with "[ ]", for instance, [temp.cfg]. Such deleted files can be restored by the **undelete** command.

Use the **reset recycle-bin** command to delete the file from the recycle bin permanently.

Example

Display the information about the file flash:/backup/config.cfg.

```
<XE> dir flash:/backup/config.cfg
Directory of flash:/backup/
   0   -rw-       957  Mar 17 2005 16:15:40   config.cfg
15621 KB total (1610 KB free)
```

4.1.8 execute

Syntax

execute *filename*

View

System view

Parameter

filename: Name of the batch file, with a suffix of ".bat", ranging from 1 to 256.

Description

Use the **execute** command to execute the specified batch file.

This command executes the command lines in the batch file one by one. Invisible characters are not allowed; otherwise the current batch process will be stopped. The execution process of the command can be regarded as the automatic process of manual execution line by line. The command does not guarantee the execution of each command, nor does it perform hot backup. The forms and contents of the commands are not restricted in the batch file.

Example

Execute the batch file "test.bat" in the directory of "flash:/".

```
[XE] execute test.bat
```

4.1.9 file prompt

Syntax

file prompt { **alert** | **quiet** }

View

System view

Parameter

alert: Enables interactive acknowledgement in case of data loss or destruction due to user operation (e.g., deleting a file).

quiet: No prompt appears in case of data loss or destruction due to user operation (e.g., deleting a file).

Description

Use the **file prompt** command to modify the prompt mode of file operation.

By default, the prompt mode is **alert**. When the prompt mode of file operation is set to **quiet**, no prompt appears in case of risky operation (e.g., deleting a file), although such operation may cause data loss

Example

Set the prompt mode of the file operation to quiet.

```
[XE] file prompt quiet
```

Set the prompt mode of the file operation to alert.

```
[XE] file prompt alert
```

4.1.10 format

Syntax

format *device-name*

View

User view

Parameter

device-name: Name of the device.

Description

Use the **format** command to format the storage device.

Formatting will cause permanent loss of all the files on a specified storage device.

Example

Format Flash.

```
<XE> format flash:
All sectors will be erased, proceed? [Y/N]:y
```

```
Format flash: completed
```

4.1.11 mkdir

Syntax

mkdir *directory*

View

User view

Parameter

directory : Name of directory.

Description

Use the **mkdir** command to create a directory under the specified directory on the specified storage device.

The name of the directory to be created cannot be the same with that of any other directory or file under the specified directory.

Example

Create a directory named dd.

```
<XE> mkdir dd
Created dir flash:/dd.
```

4.1.12 more

Syntax

more *filename*

View

User view

Parameter

filename :Name of the file.

Description

Uses the **more** command to display the contents of a specified file.

By default, the file system displays the file in the form of text, that is, the contents of the file.

Example

Display the content of the file test.txt.

```
<XE> more test.txt
AppWizard has created this test application for you.
This file contains a summary of what you will find in each of the files that
make up your test application.
Test.dsp
This file (the project file) contains information at the project level and is
used to build a single project or subproject. Other users can share the project
(.dsp) file, but they should export the makefiles locally.
```

4.1.13 move

Syntax

move *filename_source filename_dest*

View

User view

Parameter

filename_source: Name of the source file.

filename_dest: Name of the destination file.

Description

Use **move** command to move a file.

If the name of the destination file is the same with that of an existing directory, the file will be moved into the directory. If the name of the destination file is the same with that of an existing file, a prompt will appear asking whether to overwrite the existing file.

Example

Move the file from flash:/test/sample.txt to flash:/sample.txt

```
<XE> move flash:/test/sample.txt flash:/sample.txt
Move flash:/test/sample.txt to flash:/sample.txt ?[Y/N]:y
% Moveded file flash:/test/sample.txt flash:/sample.txt
```

4.1.14 pwd

Syntax

pwd

View

User view

Parameter

None

Description

Use the **pwd** command to display the current directory.

If the current directory has not been set, the operation will fail.

Example

Display the current directory.

```
<XE> pwd
flash:/test
```

4.1.15 rename

Syntax

rename *filename-source filename-dest*

View

User view

Parameter

filename-source: Name of the source file.

file-dest: Name of the destination file.

Description

Use the **rename** command to rename a file.

If the name of the destination file is the same with that of an existing directory, the execution fails. If the name of the destination file is the same with that of an existing file, the operation fails.

⚠ **Caution:**

If there is only one application file (system file) in the system, you are not allowed to modify the file name. Otherwise, the system may break down when you upgrade the application of the XE IP PBX.

Example

Rename the file sample.txt as sample.bak

```
<XE> rename sample.txt sample.bak
Rename flash:/sample.txt to flash:/sample.bak ?[Y/N]:y
% Renamed file flash:/sample.txt flash:/sample.bak
```

4.1.16 reset recycle-bin

Syntax

reset recycle-bin *filename*

View

User view

Parameter

filename: Name of the file to be deleted.

Description

Use the **reset recycle-bin** command to delete a file from the recycle bin permanently.

This command supports "*" wildcard. The **delete** command only moves a file to the recycle bin directory. To delete a file permanently, use the **reset recycle-bin** command.

Example

Delete the specified file from the recycle bin.

```
<XE> reset recycle-bin flash:/p1h_logic.out
reset flash:/plh_logic.out?[Y/N]:y
```

4.1.17 rmdir

Syntax

rmdir *directory*

View

User view

Parameter

directory: Name of the directory.

Description

Use the **rmdir** command to delete a directory.

The directory to be deleted must be empty.

Example

Delete the directory subdir.

```
<XE> rmdir subdir
Rmdir subdir?[Y/N]:y
% Removed directory subdir
```

4.1.18 undelete

Syntax

undelete *filename*

View

User view

Parameter

filename: Name of the file to be restored.

Description

Uses the **undelete** command to restore deleted files.

If the name of the file to be restored is the same with that of an existing directory, the execution fails. If the name of the file is the same with that of an existing file, a prompt will appear asking whether to overwrite the existing file.

Example

Restores the deleted file sample.bak.

```
<XE> undelete sample.bak
Undelete flash:/test/sample.bak ?[Y/N]:y
% Undeleted file flash:/test/sample.bak
```

4.2 Configuration File Management Commands

4.2.1 display current-configuration

Syntax

display current-configuration [**interface** *interface-type* [*interface-number*] | **configuration** [**gui** | **ls** | **ps** | **system** | **user-interface**]] [| { **begin** | **include** | **exclude** } *string*]

View

Any view

Parameter

interface: Displays the configuration of the interface.

interface-type: Interface type.

interface-number: Interface number.

configuration: Displays the specified configuration.

gui: Displays the GUI configuration.

ls: Displays the configuration of Location Server.

ps: Displays the configuration of Process Server.

system: Displays the system configuration.

user-interface: Displays the configuration of user interface.

|: Uses the regular expression to filter and display the configuration of the XE IP PBX.

begin: Displays the configuration beginning with specified string.

include: Displays the configuration including specified string.

exclude: Displays the configuration without specified string.

string: Regular expression characters.

Description

Use the **display current-configuration** command to display the current configuration of the XE IP PBX.

Some parameters configured currently are not displayed when they are the same with default.

When a set of configuration is completed and requires verification, you can use the **display current-configuration** command to check the currently effective parameters. Some parameters are not displayed if the related functions are not available.

Related command: **save**, **reset saved-configuration**, **display saved-configuration**.

Example

Display the currently effective PS configuration parameters of the XE IP PBX.

```
<XE> display current-configuration configuration ps
#
process-server
 ps-config ps0 interface GigabitEthernet0/0
 heartbeat password key
 start
 #
 gatekeeper
  start
 #
```

```
 sip
  start
#
return
```

4.2.2 display saved-configuration

Syntax

display saved-configuration

View

Any view

Parameter

None

Description

Use **display saved-configuration** command to display the saved configuration of the XE IP PBX, that is, the configuration of the XE IP PBX for the next boot.

Related command: **save**, **reset saved-configuration**, **display current-configuration**.

Example

Display the configuration file of XE IP PBX in storage device.

```
<XE> display saved-configuration
#
 sysname XE
#
 tcp window 8
#
 undo multicast igmp-all-enable
#
interface Aux0
 link-protocol ppp
#
interface Ethernet0/0/0
#
interface NULL0
#
user-interface con 0
user-interface aux 0
user-interface vty 0 4
```

```
#
return
```

4.2.3 display startup

Syntax

display startup

View

Any view

Parameter

None

Description

Use the **display startup** command to display the configuration file used for startup.

Example

Display the configuration file used for startup.

```
<XE> display startup
  Startup saved-configuration file:          flash:/config.cfg
  Next startup saved-configuration file:     flash:/xhy.cfg
```

4.2.4 display this

Syntax

display this

View

Any view

Parameter

None

Description

Use the **display this** command to display the current configuration of the current view.

Example

Display the current configuration of the current view.

```
[XE] display this
#
 sysname XE
```

```
#
 tcp window 8
#
return
```

4.2.5 reset saved-configuration

Syntax

reset saved-configuration

View

User view

Parameter

None

Description

Use **reset saved-configuration** command to erase the saved configuration of XE IP PBX.

Be careful when executing this command. It is recommended to use this command under the guide of technical staff.

Generally, the command is used under following cases:

- When a used XE IP PBX is applied in a new application environment.
- The old configuration files cannot fit the new environment.

Related command: **save**, **display current-configuration**, **display saved-configuration**.

Example

Erase the configuration of the XE IP PBX.

```
<XE> reset saved-configuration
This will erase the configuration in the device.
The VPN GW configurations will be erased to reconfigure!
Are you sure?[Y/N]:y
```

4.2.6 save

Syntax

save [*file-name*] [**safely**]

View

User view

Parameter

file-name: File name. The extension must be cfg.

safely: If **safely** is not used, the system saves the configuration file quickly, and is not allowed to reboot or power off in the duration; otherwise, the configuration will be lost. If **safely** is used, the system will save the configuration file slowly, but the file will be saved in Flash if the device is rebooted or powered off.

Description

Use the **save** command to save the current configuration to the storage device. Confirmation is required when you use this command.

When a set of configuration completes and the functions are available, the current configuration file should be saved in the storage device.

By default, quick save mode is applied, which is recommended in a stable power condition. In an unstable power or remote maintenance condition, however, you are recommended to execute the command with the **safely** keyword.

Related command: **reset saved-configuration**, **display current-configuration**, **display saved-configuration**.

Example

Save the current configuration files to the default storage device.

```
<XE> save
The configuration will be written to the device.
Are you sure?[Y/N]:y
Now saving current configuration to the device.
Saving configuration flash:/config.cfg. Please wait...


Current configuration has been saved to the device successfully.
```

4.2.7 save-now

Syntax

save-now

View

Any view

Parameter

None

Description

Use the **save-now** command to save the current configuration to the storage device without confirmation.

Related command: **save**.

Example

Save the current configuration files to the default storage device.

```
<XE> save-now
Now saving current configuration to the device.
Saving configuration flash:/config.cfg. Please wait...

Current configuration has been saved to the device successfully.
```

4.2.8 startup saved-configuration

Syntax

startup saved-configuration *filename*

View

User view

Parameter

filename: Name of the configuration file.

Parameter

Use the **startup saved-configuration** command to set the configuration file used for the next boot.

After the setting is complete, the system will use the configuration file as the boot file for the next startup.

Note:

The configuration file is named as follows:

config.cfg: Default name of the configuration file, which is specified by the manufacturer, but the contents of this file can be changed by the user. There are three cases in which the system selects the configuration for startup.

- If you have set to boot with skipping the configuration file, the system starts with null configuration.
- If you have specified the start configuration file, the system selects the specified file as the start configuration file if the file exists; if the file does not exist, the system starts with null configuration.
- If you have not specified the start configuration file, the system searches for the config.cfg file and selects this file as the start configuration file if it exists; if the file does not exist, the system starts with null configuration.

Example

Set the configuration file to be used for the next boot to master.cfg.

```
<XE> startup saved-configuration master.cfg
```

Display the configuration file used for the next boot.

```
<XE> display startup
  Startup saved-configuration file:          flash:/config.cfg
Next startup saved-configuration file:     flash:/master.cfg
```

The config.cfg file is the system default configuration file, and the master.cfg is the specified configuration file used for next startup.

4.2.9 upgrade

Syntax

upgrade bootrom [**full**]

View

User view

Parameter

bootrom: Updates the Boot ROM program.

full: Updates all of the Boot ROM.

Description

Use the **upgrade** command to upgrade the Boot ROM program.

Boot ROM program of XE IP PBX supports online upgrade.

You can upgrade the Boot ROM online by extracting the Boot ROM program from the upgrade software package and writing it into the Boot ROM. When executing this command, make sure that the upgrade software package (named bootromfull) is in the root directory of the Flash.

Example

Upgrade the Boot ROM program of R1760 XE IP PBX. Suppose the upgrade software package has been stored in the root directory of the Flash and the file name is “bootromfull”.

```
<XE> upgrade bootrom full
```

4.3 FTP Server Configuration Commands

4.3.1 display ftp-server

Syntax

display ftp-server

View

Any view

Parameter

None

Description

Use the **display ftp-server** command to display the parameters of the current FTP server.

After setting FTP parameters, use this command to display the configuration.

Example

Display the configured parameters of FTP server.

```
<XE> display ftp-server
   FTP server is running
   Max user number       1
   User count            0
   Timeout value(in minute)       30
   Put Method                     fast
```

The previous information indicates that the FTP server is started up and can support up to 1 logon users simultaneously. Now there are no logon user; the timeout of an FTP user is 30 minutes, and the file is transmitted in fast mode.

4.3.2 display ftp-user

Syntax

display ftp-user

View

Any view

Parameter

None

Description

Use the **display ftp-user** command to display the parameters of the current FTP user.

Example

Display the FTP user parameter configuration.

```
[XE] dis ftp-user
  UserName             HostIP    Port    Idle              HomeDir
    anchun     192.168.80.100    1029       2        flash:/backup
```

The previous information indicates that a connection between an FTP user named anchun and the FTP server has been established. The IP address of the remote host is 192.168.80.100; the remote port number is 1029; and the authorized directory is flash:/backup. So far the user has not sent any service request to the FTP server in two minutes.

4.3.3 ftp server enable

Syntax

ftp server enable

undo ftp server

View

System view

Parameter

None

Description

Use the **ftp server enable** command to enable the FTP server and allow the login of FTP users.

Use the **undo ftp server** command to disable the FTP server and disallow the login of FTP users.

By default, the FTP server is disabled.

Example

Disable the FTP server.

```
[XE] undo ftp server
```

4.3.4 ftp timeout

Syntax

ftp timeout *minute*

undo ftp timeout

View

System view

Parameter

minute: Connection timeout (in minutes) in the range of 1 to 35791. By default, it is 30 minutes.

Description

Use the **ftp timeout** command to set the connection timeout.

Use the **undo ftp timeout** command to restore the default connection timeout.

Once the user logs onto the FTP server, if an abnormal disconnection occurs or the user disrupts the connection abnormally, FTP server is not notified and thus the connection is still on. To avoid such a problem, you can set a connection timeout. If the connection is idle in a period of time, FTP server regards it as connection failure and terminate the connection.

Example

Set the connection timeout to 36 minutes.

```
[XE] ftp timeout 36
```

4.3.5 ftp update

Syntax

ftp update { **fast** | **normal** }

undo ftp update

View

System view

Parameter

fast: Fast update mode.

normal: Normal update mode.

Description

Use the **ftp update** command to set the update mode.

By default, the FTP update is in fast mode.

When a user logs onto FTP server to upload files using the **put** command, two modes for FTP server file update are available: fast update mode and normal update mode.

- In fast update mode, the FTP Server starts to write a user's uploaded file into the Flash after the file has been uploaded and received by the server. The existing files in the XE IP PBX will not be damaged although the abnormal case (such as power off) happens during the transmission.
- In normal update mode, the FTP Server receives the user files and writes them in the Flash at the same time. The current XE IP PBX files might be damaged due to exceptions such as power off. Compared with fast update mode, the normal update mode needs less memory in the XE IP PBX.

Example

Set the FTP update mode to normal.

```
[VPN GW] ftp update normal
```

4.3.6 local-user ftp-directory

Syntax

local-user *local-user* **ftp-directory** *directory*

undo local-user *local-user* **ftp-directory**

View

System view

Parameter

local-user: Username.

directory: Accessible directory.

Description

Use the **local-user ftp-directory** command to authorize FTP users to use the directory.

Use the **undo local-user ftp-directory** to remove the authorization.

By default, the system does not authorize FTP users to use the directory. The command can be used with the **local-user password** command.

Related command: **local-user password**.

Example

Authorize a user XE whose password is h3c (in cipher text) to access the directory flash:/h3c/lst/.

```
[XE] local-user XE password cipher h3c
[XE] local-user XE ftp-directory flash:/h3c/lst/
```

4.3.7 local-user password

Syntax

local-user *local-user* **password** { **simple** | **cipher** } *password*

undo local-user *local-user*

View

System view

Parameter

local-user and *password*: Username and the password. By default, no password is required. Username is up to 80 letters and case insensitive; the password is no more than 16 letters.

simple: Displays the password in simple text.

cipher: Displays the password in cipher text.

Description

Use the **local-user password** command to add a user and configure the user's password.

Use the **undo local-user** command to delete a user.

By default, the user database of the system is empty.

The user database can be used for CHAP authentication and PAP authentication. It is recommended to display the password in cipher text. If only **local-user** *local-user* command is entered, there will be no respond, and the new user named *local-user* will not be generated, so the old user named *local-user* will not be affected.

Example

Add a user whose name and password are both XE1; and the password is to be displayed in cipher text.

```
[XE] local-user XE1 password cipher XE1
```

4.3.8 local-user service-type

Syntax

local-user *local-user* **service-type** { **ftp** | **terminal** | **telnet** }*

undo local-user *local-user* **service-type**

View

System view

Parameter

local-user: Username.

ftp: Authorizes the user to use FTP.

terminal: Authorizes the user to use terminal service (that is, logging on from the Console port).

telnet: Authorizes the user to use Telnet service.

Description

Use the **local-user service-type** command to set the terminal services available to the user.

Use the **undo local-user service-type** command to restore the default terminal services available to the user.

By default, all terminal services are available to the user. The command can be used together with the **local-user** *local-user* **password** command.

Related command: **local-user password**.

Example

Authorize the user XE whose password is h3c to use the telnet service only.

```
[XE] local-user XE password cipher h3c
[XE] local-user XE service-type telnet
```

Authorize the user XE whose password is h3c to use the FTP service only.

```
[XE] local-user XE password cipher h3c
[XE] local-user XE service-type ftp
```

4.4 FTP Client Configuration Commands

4.4.1 ascii

Syntax

ascii

View

FTP client view

Parameter

None

Description

Use the **ascii** command to set the type of the transmitted data to ASCII format.

By default, the data type is ASCII format.

Example

Set the data type to ASCII format.

```
[ftp] ascii
200 Type set to A.
```

4.4.2 binary

Syntax

binary

View

FTP client view

Parameter

None

Description

Use the **binary** command to set the type of transmitted data to binary format.

Example

Set the data type binary format.

```
[ftp] binary
200 Type set to B.
```

4.4.3 bye

Syntax

bye

View

FTP client view

Parameter

None

Description

Use the **bye** command to terminate the connection to the remote FTP server and return to the user view.

Example

Terminate the connection to the remote FTP server and return to the user view.

```
[ftp] bye
<XE>
```

4.4.4 cd

Syntax

cd *pathname*

View

FTP client view

Parameter

pathname: Directory name.

Description

Use the **cd** command to change the operating path on the remote FTP server.

Example

Change operating path to d:/temp.

```
[ftp] cd d:/temp
```

4.4.5 cdup

Syntax

cdup

View

FTP client view

Parameter

None

Description

Use the **cdup** command to change the operating path to an upper directory.

Example

Change the operating path to an upper directory.

```
[ftp] cdup
```

4.4.6 close

Syntax

close

View

FTP client view

Parameter

None

Description

Use the **close** command to terminate the connection to the remote FTP server and remain in FTP client view.

The command terminates the control connection and data connection to the remote FTP server simultaneously.

Example

Terminate the connection to the remote FTP server and remain in FTP client view.

```
[ftp] close
[ftp]
```

4.4.7 debugging

Syntax

debugging

undo debugging

View

FTP client view

Parameter

None

Description

Use the **debugging** command to enable the debugging.

Use the **undo debugging** to disable the debugging.

By default, the debugging of FTP client command is disabled.

Example

Enable the debugging.

```
[ftp] debugging
```

4.4.8 delete

Syntax

delete *remotefile*

View

FTP client view

Parameter

remotefile: File name.

Description

Use the **delete** command to delete a specified file.

Example

Delete the file temp.c.

```
[ftp] delete temp.c
```

4.4.9 dir

Syntax

dir [*filename*] [*localfile*]

View

FTP client view

Parameter

filename: Name of the file to be queried.

localfile: Name of the file to be saved locally.

Description

Use the **dir** command to query a specified file.

You can use this command to display all files under a directory or display the files to be queried.

Example

Query the file temp.c and save the result in the file temp1.

```
[ftp] dir temp.c temp1
```

4.4.10 disconnect

Syntax

disconnect

View

FTP client view

Parameter

None

Description

Use the **disconnect** command to terminate the connection to the remote FTP server and remain in the FTP client view.

The command terminates the control connection and data connection to FTP server simultaneously.

Example

Terminate the connection to the remote FTP server and remain in FTP client view.

```
[ftp] disconnect
```

```
[ftp]
```

4.4.11 ftp

Syntax

ftp [*host* [*port*]] [-**a** *ip-address*]

View

User view

Parameter

host: IP address or host name of the remote FTP server.

port: Port number of the remote FTP server.

-**a** *ip-address*: Source address of the specified FTP client.

Description

Use the **ftp** command to establish the control connection to the remote FTP server and enter the FTP client view.

Example

Connect to the remote FTP server with an IP address of 1.1.1.1

```
<XE> ftp 1.1.1.1
```

4.4.12 get

Syntax

get *remotefile* [*localfile*]

View

FTP client view

Parameter

localfile: Local file name.

remotefile: Name of the file on the remote FTP server.

Description

Use the **get** command to download the remote files and store them locally.

By default, if no local file name is specified, the downloaded file will have the same name with the one on the remote FTP server.

Example

Download the file temp1.c and save it as temp.c.

```
[ftp] get temp1.c temp.c
```

4.4.13 lcd

Syntax

lcd

View

FTP client view

Parameter

None

Description

Use the **lcd** command to get the local operating directory of the FTP client.

Example

Display the local operating directory.

```
[ftp] lcd
% Local directory now flash:.
```

4.4.14 ls

Syntax

ls [*remotefile*] [*localfile*]

View

FTP client view

Parameter

remotefile: Name of the remote file to be queried.

localfile: Name of the file to be saved locally.

Description

Use the **ls** command to query a specified file.

By default, all files are displayed if the command has no parameters.

Example

Query the file temp.c.

```
[ftp] ls temp.c
```

4.4.15 mkdir

Syntax

mkdir *pathname*

View

FTP client view

Parameter

pathname: Directory name.

Description

Use the **mkdir** command to establish a directory on the remote FTP server.

Example

Establish the directory named test on the remote FTP server.

```
[ftp] mkdir test
```

4.4.16 open

Syntax

open *ipaddr* [*port*] [-**a** *ip-address*]

View

FTP client view

Parameter

ipaddr: IP address of the remote FTP server.

port: Port number of the remote FTP server.

-**a** *ip-address*: Source address of the specified FTP client.

Description

Use the **open** command to establish the control connection to the remote FTP server.

Example

Establish the control connection to FTP server 10.110.3.1.

```
[ftp] open 10.110.3.1
```

4.4.17 passive

Syntax

passive

undo passive

View

FTP client view

Parameter

None

Description

Use the **passive** command to set the data transmission mode to passive mode.

Use the **undo passive** command to set the data transmission mode to active mode.

By default, the data transmission mode is passive.

Example

Set the data transmission mode to passive mode.

```
[ftp] passive
```

4.4.18 put

Syntax

put *localfile* [*remotefile*]

View

FTP client view

Parameter

localfile: Name of the local file.

remotefile: Name of the file on the remote FTP server.

Description

Use the **put** command to upload the local files to the remote FTP server.

By default, if no remote file name is specified, the uploaded file will have the same name with the one of the local file.

Example

Upload the local file temp.c to the remote FTP server and save it as temp1.c.

```
[ftp] put temp.c temp1.c
```

4.4.19 pwd

Syntax

pwd

View

FTP client view

Parameter

None

Description

Use the **pwd** command to display the operating directory on the remote FTP server.

Example

Display the operating directory on the remote FTP server.

```
[ftp] pwd
"d:/temp" is current directory.
```

4.4.20 quit

Syntax

quit

View

FTP client view

Parameter

None

Description

Use the **quit** command to terminate the connection to the remote FTP server, and return to user view.

Example

Terminate the connection to the remote FTP server, and return to user view.

```
[ftp] quit
<XE>
```

4.4.21 remotehelp

Syntax

remotehelp [*protocol-command*]

View

FTP client view

Parameter

protocol-command: FTP protocol command.

Description

Use the **remotehelp** command to display the help of the FTP protocol command.

Example

Display the syntax of the protocol command **user**.

```
[ftp] remotehelp user
214 Syntax: USER <sp> <username>
```

4.4.22 rmdir

Syntax

rmdir *pathname*

View

FTP client view

Parameter

pathname: Name of the directory on the remote FTP server.

Description

Use the **rmdir** command to delete a specified directory on the FTP server.

Example

Delete the directory d:/temp1 on the remote FTP server.

```
[ftp] rmdir d:/temp1
```

4.4.23 user

Syntax

user *username* [*password*]

View

FTP client view

Parameter

username: Name of a logon user.

password: Logon password.

Description

Use the **user** command to register with the FTP.

Example

Log onto the FTP server with the username tom and password h3c.

```
[ftp] user tom h3c
```

4.4.24 verbose

Syntax

verbose

undo verbose

View

FTP client view

Parameter

None

Description

Use the **verbose** command to enable the verbose to display the return information of the FTP server.

Use the **undo verbose** command to disable the verbose from displaying the return information of the FTP server.

By default, the verbose is disabled.

Example

Enable the verbose.

```
[ftp] verbose
```

4.5 TFTP Configuration Commands

4.5.1 tftp

Syntax

tftp *ip-address* { **get** | **sget** | **put** } *source-filename* [*destination-filename*] [-**a** *ip-address*]

View

User view

Parameter

ip-address: IP address of the TFTP server.

source-filename: Name of the source file.

destination-filename: Name of the destination file.

get: Indicates a normal downloading operation. In the **get** operation, the XE IP PBX receives a user file and writes it into Flash simultaneously. So when the *destination-filename* is **system**, the new system file will overwrite the old one in real time. When the downloading fails (e.g., the network is disconnected), the XE IP PBX cannot start up because the old file is overwritten. Therefore, it is not safe to use this command to upgrade files.

sget: Indicates a downloading operation with protection. In the **sget** operation, the XE IP PBX receives a user file and saves it into memory simultaneously. After the file is completely downloaded, the file is written into Flash. The old file is not overwritten when the system file downloading fails (e.g., the network is disconnected), therefore, it is relatively safe to use this command to upgrade files. However, this operation requires more memory space.

put: Uploads a file.

-**a** *ip-address*: Source address of a specified TFTP client.

Description

Use the **tftp** command to upload a file to TFTP server or download a file to the local hard disk.

Related command: **tftp-server acl**.

Example

Download the file config.txt from the root directory of the TFTP server to the local hard disk. IP address of the TFTP server is 1.1.254.2. The file is saved as config.bak after downloading.

```
<XE> tftp 1.1.254.2 get config.txt  flash:/config.bak
```

Upload the text file config.txt from the root directory of the Flash to the default directory of the TFTP server. IP address of the TFTP server is 1.1.254.2. The file is saved as config.bak in the TFTP server.

```
<XE> tftp 1.1.254.2 put flash:/config.txt  config.bak
```

Chapter 5 User Management Commands

5.1 AAA Configuration Commands

5.1.1 debugging aaa event

Syntax

debugging aaa event

undo debugging aaa event

View

User view

Parameter

None

Description

Use the **debugging aaa event** command to enable debugging for AAA events.

Use the **undo debugging aaa event** command to disable debugging output.

By default, debugging for AAA events is disabled.

When debugging for AAA events is enabled, information about AAA events is displayed for technicians to debug.

The system displays the following message when you terminate the connection.

```
%May  6 16:37:05 2005 XE2000 SHELL/5/LOGOUT: anchun logout from 192.168.80.30
```

This indicates the user anchun terminates the connection.

Related command: **display debugging**.

Example

Enable debugging for AAA events.

```
<XE> debugging aaa event
```

5.1.2 debugging aaa primitive

Syntax

debugging aaa primitive

undo debugging aaa primitive

View

User view

Parameter

None

Description

Use the **debugging aaa primitive** command to enable debugging for AAA primitives.

Use the **undo debugging aaa primitive** command to disable debugging for AAA primitives.

By default, debugging for AAA primitives is disabled.

The debugging output is mainly used by technicians.

Related command: **display debugging**.

Example

Enable debugging for AAA primitives.

```
<XE> debugging aaa primitive
```

Chapter 6 SNMP Configuration Commands

6.1 SNMP Configuration Commands

6.1.1 debugging snmp-agent

Syntax

debugging snmp-agent { **header** | **packet** | **process** | **trap** }

undo debugging snmp-agent { **header** | **packet** | **process** | **trap** }

View

User view

Parameter

header: Enables debugging for packet headers.

packet: Enables debugging for packets.

process: Enables debugging for SNMP packet processes.

trap: Enables debugging for trap packets.

Description

Use the **debugging snmp-agent** command to enable debugging for SNMP agents and specify the debugging output of the SNMP module.

Use the **undo debugging snmp-agent** command to disable the debugging output

By default, debugging for SNMP agents is disabled.

Example

Enable debugging for packet headers of the SNMP agent module.

```
<XE> debugging snmp-agent header
```

6.1.2 display snmp-agent

Syntax

display snmp-agent { **local-engineid** }

View

Any view

Parameter

None

Description

Use the **display snmp-agent** command to display the engine ID of local SNMP devices.

The SNMP engine, the only identification of the SNMP management, uniquely identifies an SNMP entity in one management domain. The SNMP engine is an important component of the SNMP entity, completing the functions of SNMP messages such as message dispatching, message processing, security authentication and access control.

Example

Display the engine ID of the local device.

```
<XE> display snmp-agent local-engineid
SNMP local EngineID: 000007DB7F0000013859
```

Here, SNMP local EngineID indicates the engine ID of the local SNMP entity.

6.1.3 display snmp-agent community

Syntax

display snmp-agent community [**read** | **write**]

View

Any view

Parameter

read: Displays information of the community with the read-only authority.

write: Displays the information of the community with the read and write authorities.

Description

Use the **display snmp-agent community** command to display the current community information of SNMPv1 or SNMPv2c.

Example

Display the current community information.

```
<XE> display snmp-agent community
```

6.1.4 display snmp-agent group

Syntax

display snmp-agent group [*group-name*]

View

Any view

Parameter

group-name: Specifies the group name of the SNMP information to be displayed, ranging from 1 to 32 characters.

Description

Use the **display snmp-agent group** command to display the USM-based group information.

Without any parameter, the command displays the group information of all the specified group names, including group name, security mode, and storage type.

Example

Display the group name of SNMP and security mode.

```
<XE> display snmp-agent group
   Group name: v3r2
       Security model: v3 noAuthnoPriv
       Readview: ViewDefault
       Writeview: <no specified>
       Notifyview :<no specified>
       Storage-type: nonvolatile
```

Table 6-1 Description on the fields of the **display snmp-agent group** command

Item	Description
Groupname	SNMP group name corresponding to the user
Readview	Name of the MIB view with the read-only authority the SNMP group corresponds to
Writeview	Name of the MIB view with the write/read authority the SNMP group corresponds to
Notifyview	Name of the MIB view with the notify authority the SNMP group corresponds to
storage-type	Storage type

6.1.5 display snmp-agent mib-view

Syntax

display snmp-agent mib-view [**exclude** | **include** | **viewname** *view-name*]

View

Any view

Parameter

exclude: Specifies not to display the specific SNMP MIB view attributes.

include: Specifies to display the specific SNMP MIB view attributes.

viewname: Specifies the view name to be displayed.

Description

Use the **display snmp-agent mib-view** command to display the information of the current MIB view.

Example

Display the information of the current MIB view.

```
<XE> display snmp-agent mib-view
   View name:ViewDefault
       MIB Subtree:internet
       Subtree mask:
       Storage-type: nonVolatile
       View Type:included
       View status:active

   View name:ViewDefault
       MIB Subtree:snmpUsmMIB
       Subtree mask:
       Storage-type: nonVolatile
       View Type:excluded
       View status:active

   View name:ViewDefault
       MIB Subtree:snmpVacmMIB
       Subtree mask:
       Storage-type: nonVolatile
       View Type:excluded
       View status:active
```

```
View name:ViewDefault
    MIB Subtree:snmpModules.18
    Subtree mask:
    Storage-type: nonVolatile
    View Type:excluded
    View status:active
```

6.1.6 display snmp-agent statistics

Syntax

display snmp-agent statistics

View

Any view

Parameter

None

Description

Use the **display snmp-agent statistics** command to display the state and statistics of SNMP.

Example

Display the statistics of SNMP communication.

```
<XE> display snmp-agent statistics
  0 Messages delivered to the SNMP entity
  0 Messages which were for an unsupported version
  0 Messages which used a SNMP community name not known
  0 Messages which represented an illegal operation for the community supplied
  0 ASN.1 or BER errors in the process of decoding
  0 Messages passed from the SNMP entity
  0 SNMP PDUs which had badValue error-status
  0 SNMP PDUs which had genErr error-status
  0 SNMP PDUs which had noSuchName error-status
  0 SNMP PDUs which had tooBig error-status (Maximum packet size 2000)
  0 MIB objects retrieved successfully
  0 MIB objects altered successfully
  0 GetRequest-PDU accepted and processed
  0 GetNextRequest-PDU accepted and processed
  0 GetBulkRequest-PDU accepted and processed
  0 GetResponse-PDU accepted and processed
  0 SetRequest-PDU accepted and processed
```

```
    0 Trap PDUs accepted and processed
```

6.1.7 display snmp-agent sys-info

Syntax

display snmp-agent sys-info [**contact** | **location** | **version**]*

View

Any view

Parameter

contact: Displays the contact information of local device node.

location: Displays the physical location of the local device node.

version: Displays the SNMP version running in the local agent.

Description

Use the **display snmp-agent sys-info** command to display the system information of the local SNMP device.

Example

Display the system information of the device.

```
<XE> display snmp-agent sys-info
   The contact person for this managed node:
           R&D Hangzhou, H3C Technology Co., Ltd

   The physical location of this node:
           Hangzhou, China

   SNMP version running in the system:
           SNMPv3
```

6.1.8 display snmp-agent usm-user

Syntax

display snmp-agent usm-user [**engineid** *engineid* | **username** *user-name* | **group** *group-name*] *

View

Any view

Parameter

engineid: Displays the SNMPv3 user information of the specified engine ID.

engineid-string: Character string of the engine ID.

username: Displays the information of the specified SNMPv3 user.

user-name: User name, in the range of 1 to 32 characters.

group: Displays the user information belonging to the related SNMP group.

group-name: Group name, in the range of 1 to 32 characters.

Description

Use the **display snmp-agent usm-user** command to display the information of SNMP users.

An SNMP user is the remote user who executes SNMP management operation. Use the **snmp-agent usm-user** command to specify the SNMP user.

Example

Display information about all the current users.

```
<XE> display snmp-agent usm-user
User name: authuser
   Group name: group01
       Engine ID: 800007DB7F00000100000026
       Storage-type: nonVolatile
       UserStatus: active
```

Caution:

When the SNMP agent is disabled, "Snmp Agent disabled" is displayed for all the above **display** commands.

6.1.9 snmp-agent

Syntax

snmp-agent

undo snmp-agent

View

System view

Parameter

None

Description

Use the **snmp-agent** command to enable the SNMP agent and specify the SNMP configuration information.

Use the **undo snmp-agent** command to disable SNMP agent.

By default, the SNMP agent is disabled.

Use the **snmp-agent** command to enable SNMP agent, and any configuration command of **snmp-agent** can also enable SNMP agent. However, the **undo** command does not have the functions.

When the SNMP agent is disabled, you cannot execute the **undo** command. Otherwise, you can use the **undo snmp-agent** command to disable the SNMP agent.

Example

Disable the active SNMP agent.

```
[XE] undo snmp-agent
SNMP Agent disabled
```

6.1.10 snmp-agent community

Syntax

snmp-agent community { **read** | **write** } *community-name* [**mib-view** *view-name*]
undo snmp-agent community *community-name*

View

System view

Parameter

read: Indicates that the community has the read-only authority in the specified view.

write: Indicates that the community has the read and write authorities in the specified view.

community-name: Character string of community name.

mib-view: Sets the name of the MIB view available for community name.

view-name: MIB view name.

Description

Use the **snmp-agent community** command to configure the read and write attribute of a certain community, corresponding MIB views.

Use the **undo snmp-agent community** command to remove the settings of community access name. If you perform configuration on a community repeatedly, the last configured attribute takes effect.

Related command: **snmp-agent group**, **snmp-agent usm-user**.

Example

Set the community name to comaccess and allow the read-only access with this community.

```
[XE] snmp-agent community read comaccess
```

Set the community name to mgr and enable the read and write access.

```
[XE] snmp-agent community write mgr
```

Delete the community comaccess.

```
[XE] undo snmp-agent community comaccess
```

6.1.11 snmp-agent group

Syntax

snmp-agent group { **v1** | **v2c** } *group-name* { [**read** *read-view*] | [**write** *write-view*] | [**notify** *notify-view*] }

undo snmp-agent group { **v1** | **v2c** } *group-name*

snmp-agent group v3 *group-name* [**authentication** | **privacy**] { [**read** *read-view*] | [**write** *write-view*] | [**notify** *notify-view*] }

undo snmp-agent group v3 *group-name* [**authentication** | **privacy**]

View

System view

Parameter

v1: v1 security mode in use.

v2c: v2c security mode in use.

v3: v3 security mode in use.

group-name: Group name, in the range of 1 to 32 characters.

authentication: Specifies authentication of the packet without encryption.

privacy: Specifies authentication and encryption of the packet.

read: Enables the setting of read-only view.

read-view: Specifies name of the read-only view, in the range of 1 to 32 characters.

write: Enables the setting of read/write view.

write-view: Specifies name of the read/write view, in the range of 1 to 32 characters.

notify: Enables the setting of notify view.

notify-view: Specifies name of the notify view, in the range of 1 to 32 characters.

Description

Use the **snmp-agent group** command to configure a new SNMP group, that is, to specify the authorities for the group.

Use the **undo snmp-agent group** command to delete a specified SNMP group.

By default, the **snmp-agent group** *group-name* **v3** command defines no authentication and no encryption.

Related command: **snmp-agent mib-view**, **snmp-agent usm-user**.

Example

Create an SNMPv3 group known as Johngroup.

```
[XE] snmp-agent group v3 Johngroup
```

6.1.12 snmp-agent local-engineid

Syntax

snmp-agent local-engineid *engineid*

undo snmp-agent local-engineid

View

System view

Parameter

engineid: Character string of the engine ID. It must be a hexadecimal number within the length from 10 to 64.

Description

Use the **snmp-agent local-engineid** command to configure engine ID for the local SNMP entity.

Use the **undo snmp-agent local-engineid** command to remove the current settings and restore the default.

By default, the engine ID of the device is "enterprise number + device information" of the company. Each device determines the device information. It can be either the IP address, MAC address or the user-defined hexadecimal number string.

Related command: **snmp-agent usm-user**.

Example

Configure the name of the local device to 12345.

```
[XE] snmp-agent local-engineid 12345
```

6.1.13 snmp-agent mib-view

Syntax

snmp-agent mib-view { **included** | **excluded** } *view-name oid-tree*

undo snmp-agent mib-view *view-name*

View

System view

Parameter

view-name: Name of the view.

oid-tree: OID MIB subtree of the Mib object subtree, which can be a character string of the variable OID or of variable name. For example, it can be character strings such as 1.4.5.3.1 and “system”, or use "*" as wildcard, for example, 1.4.5.*.*.1.

included: Includes the MIB subtree.

excluded: Exclude the MIB subtree.

Description

Use the **snmp-agent mib-view** command to create or update the view information.

Use the **undo snmp-agent mib-view** command to delete the current settings.

By default, the view name is ViewDefault and the OID is 1.3.6.1.

Currently, this command supports the parameter input of both the character string of the variable OID and the node name.

Related command: **snmp-agent group**.

Example

Create a view that includes all MIB-II objects.

```
[XE] snmp-agent mib-view included mib2 1.3.6.1
```

6.1.14 snmp-agent packet max-size

Syntax

snmp-agent packet max-size *byte-count*

undo snmp-agent packet max-size

View

System view

Parameter

byte-count: Maximum length of the SNMP packets that Agent can receive or send, in the range of 484 bytes to 17940 bytes. The default value is 2000.

Description

Use the **snmp-agent packet max-size** command to set the maximum length of the SNMP message packets that Agent can receive or send.

Use the **undo snmp-agent packet max-size** command to remove the current settings.

Example

Set the maximum length of the SNMP packet that agent can receive or send to 1042 bytes.

```
[XE] snmp-agent packet max-size 1042
```

6.1.15 snmp-agent sys-info

Syntax

snmp-agent sys-info { **contact** *sysContact* | **location** sysL*ocation* | **version** { { **v1** | **v2c** | **v3** } * | **all** } }

undo snmp-agent sys-info { **contact** | **location** | **version** { { **v1** | **v2c** | **v3** } * | **all** } }

View

System view

Parameter

contact: Contact information of the system maintenance.

sysContact: Character string describing the system maintenance contact information.

location: Physical location of the device node.

sysLocation: Device location information.

version: Specifies the SNMP version number used by the system.

v1: SNMP v1.

v2c: SNMP v2c.

v3: SNMP v3.

*: Indicates selection of one to three items from the three options of **v1**, **v2c** and **v3.**

all: SNMP v1, SNMP v2c and SNMP v3.

Description

Use the **snmp-agent sys-info** command to set the system information, including the system maintenance information, physical location of the device and the SNMP version in use.

Use the **undo snmp-agent sys-info** command to remove the current settings.

By default, the contact information for system maintenance is "R&D Hangzhou, H3C Technology Co., Ltd.", the information of physical location is "Hangzhou, China" and the version is SNMPv3.

Related command: **display snmp-agent sys-info**.

Example

Set the system maintenance information as call Operator at 010-82882488.

```
[XE] snmp-agent sys-info contact call Operator at 010-82882488
```

6.1.16 snmp-agent target-host

Syntax

snmp-agent target-host trap address udp-domain *X.X.X.X* [**udp-port** *port-number*] **params securityname** *security-string* [**v1** | **v2c** | **v3** { **authentication** | **privacy** }]

undo snmp-agent target-host *X.X.X.X* **securityname** *security-string*

View

System view

Parameter

trap: Specifies the host as the trap host.

address: Specifies the address of the target host to which the SNMP message transmits.

udp-domain: Specifies that the transmission domain of the target host is based on UDP.

X.X.X.X: IP address of the host.

udp-port: Specifies the port.

port-number: Specifies the number of the port that receives the trap packet.

params: Specifies the information of the logging host that generates SNMP messages.

securityname: Specifies the community name of SNMPv1, v2c or the username of SNMPv3.

security-string: Community name of SNMPv1, SNMPv2c or the username of SNMPv3, in the range of 1 to 32 characters

v1: SNMPv1.

v2c: SNMPv2c.

v3: SNMPv3.

authentication: Indicates authentication with the packet without encryption.

privacy: Indicates both authentication and encryption with the packet.

Description

Use the **snmp-agent target-host** command to set the target host that receives the SNMP notification.

Use the **undo snmp-agent target-host** command to remove the current settings.

- The **snmp-agent target-host** command is used in combination with the **snmp-agent trap enable** command.
- Use the **snmp-agent trap enable** command to enable devices to send trap packets. If one host is configured to send notification message, the host should be configured at least the **snmp-agent target-host** and **snmp-agent trap enable** commands.

Related command: **snmp-agent trap enable**, **snmp-agent trap source**, **snmp-agent trap life**.

Example

Enable to send SNMP trap packets to 10.1.1.1 with the community name of comaccess.

```
[XE] snmp-agent trap enable standard
[XE] snmp-agent target-host trap address udp-domain 10.1.1.1 params securityname comaccess
```

Enable to send SNMP trap packets to 10.1.1.1 with the community name of public.

```
[XE] snmp-agent trap enable standard
[XE] snmp-agent target-host trap address udp-domain 10.1.1.1 params securityname public
```

6.1.17 snmp-agent trap enable

Syntax

snmp-agent trap enable [*trap-type* [*trap-list*]]

undo snmp-agent trap enable [*trap-type* [*trap-list*]]

View

System view

Parameter

trap-type: Enables the trap packet of *trap-type*.

trap-list: Parameter list corresponding to the trap packets of *trap-type.*

Description

Use the **snmp-agent trap enable** command to enable the device to send trap packets and set the trap or notification parameters.

Use the **undo snmp-agent trap enable** command to remove the current settings.

By default, sending trap packets is disabled.

The **snmp-agent trap enable** command without parameters indicates sending all types of SNMP trap packets of all the modules.

The **snmp-agent trap enable** command is used in combination with the **snmp-agent target-host** command. Use the **snmp-agent target-host** command to specify the hosts to which the trap packets are sent. To send trap packets, you must configure at least one **snmp-agent target-host** command.

The module *trap-type* sending the trap packets can be **configuration**, **flash**, **standard** and **system**.

Types of packets that **standard** modules can send include **authentication**, **coldstart**, **linkdown**, **linkup** and **warmstart.**

Related command: **snmp-agent target-host** and **snmp-agent trap source**.

Example

Enable to send all types of BGP trap packets to 10.1.1.1 in the v3 packet format, with the "super" community name, and being authenticated but not encrypted.

```
[XE] snmp-agent trap enable bgp
[XE] snmp-agent target-host trap address udp-domain 10.1.1.1 params securityname super v3 authentication
```

6.1.18 snmp-agent trap life

Syntax

snmp-agent trap life *seconds*

undo snmp-agent trap life

View

System view

Parameter

seconds: Timeout time in seconds, ranging from 1 to 2,592,000 with the default value 120.

Description

Use the **snmp-agent trap life** command to set the hold time of the trap packet. Any trap packets exceeding the time are dropped.

Use the **undo snmp-agent trap life** command to remove the current settings.

The trap packets over the hold time, which is specified by the *second* parameter, are discarded without being resent or conserved.

Related command: **snmp-agent trap enable**, **snmp-agent target-host**.

Example

Set the timeout time of the trap packet to 60 seconds.

```
[XE] snmp-agent trap life 60
```

6.1.19 snmp-agent trap queue-size

Syntax

snmp-agent trap queue-size *size*

undo snmp-agent trap queue-size

View

System view

Parameter

size: Length of the message queue, ranging from 1 to 1000.

Description

Use the **snmp-agent trap queue-size** command to set the length of the message queue for the trap packet sent to the target host.

Use the **undo snmp-agent trap queue-size** command to cancel the current setting.

By default, the length is 100.

Related command: **snmp-agent trap enable**, **snmp-agent target-host**, **snmp-agent trap life**.

Example

Set the length of the message queue for the trap packet to 200.

```
[XE] snmp-agent trap queue-size 200
```

6.1.20 snmp-agent trap source

Syntax

snmp-agent trap source *interface-type interface-number* [*subinterface-type*]

undo snmp-agent trap source

View

System view

Parameter

interface-type: Interface type.

interface-number: Interface number.

subinterface-type: Subinterface type.

Description

Use the **snmp-agent trap source** command to specify the source address from which trap packets are sent.

Use the **undo snmp-agent trap source** command to cancel the current settings.

There is always a trap address when the SNMP trap packet is being sent from a server, no matter from which interface it is sent. This command can be used to trace a specific event.

Related command: **snmp-agent trap enable**, **snmp-agent target-host**.

Example

Specify the IP address of the Ethernet interface 1/0 as the source address of trap packet.

```
[XE] snmp-agent trap source ethernet 1/0
```

6.1.21 snmp-agent usm-user

Syntax

snmp-agent usm-user { **v1** | **v2c** } *user-name group-name*

undo snmp-agent usm-user { **v1** | **v2c** } *user-name group-name*

snmp-agent usm-user v3 *user-name group-name* [[**authentication-mode** { **md5** | **sha** } *auth-password*] [**privacy des56** *priv-password*]]

undo snmp-agent usm-user v3 *user-name group-name* { **local** | **engineid** *engineid-string* }

View

System view

Parameter

v1: Security mode of v1 in use.

v2c: Security mode of v2c in use.

v3: Security mode of v3 in use.

user-name: User name, in the range of 1 to 32 characters.

group-name: Group name the user corresponds to, in the range of 1 to 32 characters.

authentication-mode: Specifies to use authentication for the security level.

md5: Specifies the authentication protocol as HMAC-MD5-96.

sha: Specifies the authentication protocol as HMAC-SHA-96.

auth-password: Authentication password, which is a character string in the range of 1 to 64 characters.

privacy: Specifies the security level as encrypted.

des56: Specifies the encryption protocol as DES.

priv-password: Encryption password, which is a character string in the range of 1 to 64 characters.

local: Indicates the local entity user.

engineid: Specifies the engine ID associated with the user.

engineid-string: Character string of engine ID.

Description

Use the **snmp-agent usm-user** command to add a new user to an SNMP group.

Use the **undo snmp-agent usm-user** command to delete an SNMP group user.

When you configure a remote user for a certain agent, the engine ID is needed for authentication. If the engine ID changes after you configure the user, the user corresponding to the former engine ID will be ineffective.

For SNMPv1 and SNMPv2c, this command adds a new community name. For SNMPv3, it adds a new user to an SNMP group.

Related command: **snmp-agent group**, **snmp-agent community**, **snmp-agent local-engineid**.

Example

Add a user "John" to the SNMP group "Johngroup", with the security level of requiring authentication, the specified authentication protocol as HMAC-MD5-96 and the password as "hello".

```
[XE] snmp-agent usm-user v3 John Johngroup authentication-mode md5 hello
```

Chapter 7 Modem Management Configuration Commands

7.1 Modem Management Configuration Commands

7.1.1 debugging modem

Syntax

debugging modem

View

User view

Parameter

None

Description

Use the **debugging modem** command to enable debugging for the Modem.

Through the output of this command, you can check whether a proper Modem script is specified for a particular event.

Example

None

7.1.2 modem

Syntax

modem [**both** | **call-in**]

undo modem [**both** | **call-in**]

View

User-interface view

Parameter

both: Specifies both incoming and outgoing calls of the Modem.

call-in: Specifies only incoming calls of the Modem.

Description

Use the **modem** command to allow only incoming calls or both incoming and outgoing calls of the Modem.

Use the **undo modem** command to inhibit incoming calls and outgoing calls of the Modem.

By default, both incoming and outgoing calls of the Modem are inhibited.

You can use the commands here to configure the incoming and outgoing access of the Modem connected with the AUX port.

Example

Enable only the AUX port to receive incoming calls.

```
[XE-ui-aux0] modem call-in
```

7.1.3 modem auto-answer

Syntax

modem auto-answer

undo modem auto-answer

View

User-interface view

Parameter

None

Description

Use the **modem auto-answer** command to configure the answer mode for the Modem connected with the AUX port to auto.

Use the **undo modem auto-answer** command to configure the answer mode for the Modem to non-auto.

By default, the answer mode on the system for the Modem is non-auto.

You should perform this configuration based on the answer mode state of the connected Modem. If the Modem is in auto-answer mode (AA LED of the Modem lights), you should execute the **modem auto-answer** command before dial up.

The commands cannot change the state of the Modem; they are only used to reflect the answer mode state of the Modem. So, whether to execute the **modem auto-answer** command depends on the answer mode state (state of the AA LED) of the Modem.

Related command: **modem**.

Example

Configure the answer mode for the mode connected with the AUX port to auto.

```
[XE-ui-aux0] modem auto-answer
```

7.1.4 script trigger connect

Syntax

script trigger connect *script-name*

undo script trigger connect

View

User-interface view

Parameter

script-name: Name of a script in the script set.

Description

Use the **script trigger connect** command to specify the automatically executed Modem script when an incoming call connection is set up successfully.

By default, no script is specified.

Use the **undo script trigger connect** command to cancel the specification.

The system executes the specified script when an incoming call connection of the Modem is set up.

Related command: **script-string**, **script trigger login**, **script trigger logout**, **script trigger dial**, **script trigger init**.

Example

Specify "example" as the automatically executed Modem script when an incoming connection is set up successfully.

```
[XE-ui1] script trigger connect example
```

7.1.5 script trigger dial

Syntax

script trigger dial *script-name*

undo script trigger dial

View

User-interface view

Parameter

script-name: Name of a script in the script set.

Description

Use the **script trigger dial** command to specify the automatically executed Modem script when a DCC dialup is made.

Use the **undo script trigger dial** command to cancel the specification.

By default, no script is specified.

The system executes the specified script when a DCC dialup is made.

Related command: **script-string**, **script trigger login**, **script trigger connect**, **script trigger logout**, **script trigger init**.

Example

Specify "example" as the automatically executed Modem script when a DCC dialup is made.

```
[XE-ui1] script trigger dial example
```

7.1.6 script trigger init

Syntax

script trigger init *script-name*

undo script trigger init

View

User-interface view

Parameter

script-name: Name of a script in the script set.

Description

Use the **script trigger init** command to specify the automatically executed Modem script when the system is powered on or rebooted.

Use the **undo script trigger init** command to cancel the specification.

The system executes the specified script when the system is powered on or rebooted.

By default, no script is specified.

Related command: **script-string**, **script trigger login**, **script trigger connect**, **script trigger dial**, **script trigger logout**.

Example

Specify "example" as the automatically executed Modem script when the system is powered on or rebooted.

```
[XE-ui1] script trigger init example
```

7.1.7 script trigger login

Syntax

script trigger login *script-name*

undo script trigger login

View

User-interface view

Parameter

script-name: Name of a script in the script set.

Description

Use the **script trigger login** command to specify the automatically executed Modem script when an outgoing call connection is set up successfully.

Use the **undo script trigger login** command to cancel the specification.

By default, no script is specified.

The system executes the specified script when an outgoing call connection is set up successfully. You can define a script, for example, with the login strings and password to log into a remote UNIX server, then use this command to enable the successful connection between this system and the remote system to trigger the execution of this script to log into the remote system.

Related command: **script-string**, **script trigger connect**, **script trigger logout**, **script trigger dial**, **script trigger init**.

Example

Specify "example" as the automatically executed Modem script when an outgoing call connection is set up successfully.

```
[XE-ui1] script trigger login example
```

7.1.8 script trigger logout

Syntax

script trigger logout *script-name*

undo script trigger logout

View

User-interface view

Parameter

script-name: Name of a script in the script set.

Description

Use the **script trigger logout** command to specify the automatically executed Modem script when a line is reset.

By default, no script is specified.

Use the **undo script trigger logout** command to cancel the specification.

The system executes the specified script when a line is reset. For example, you can use the command to specify a script to reset the Modem when a call is dropped.

Related command: **script-string**, **script trigger login**, **script trigger connect**, **script trigger dial**, **script trigger init**.

Example

Specify "example" as the automatically executed Modem script when a line is reset.

```
[XE] script-string drop-line "" +++ OK ATH OK "ATS0=1" OK
[XE-ui1] script trigger logout drop-line
```

7.1.9 script-string

Syntax

script-string *script-name script-content*

undo script-string *script-name*

View

System view

Parameter

script-name: Script name.

script-content: Script content.

Description

Use the **script-string** command to define a Modem script.

Use the **undo script-string** command to delete a Modem script.

By default, no Modem script is defined.

Using the Modem scripts written with the script language provided by the XE IP PBX, you can make the system:

- Flexibly control different models of Modems. Through executing different initialization AT command set, the XE IP PBX can well cooperate with a variety of Modems produced by different manufacturers with different models.
- Log into a remote system in interactive mode. Interactive negotiation of script can turn the system into different connection states. For example, after the AUX port on the XE IP PBX set up a connection with the remote device through the Modem, it negotiates the protocol to be encapsulated on the physical link and the operating parameters of the protocol with the remote device.

The general format for Modem script is as follow:

send-string1 receive-string1 send-string2 receive-string2 .....

Where:

- *send-string* represents to send character string.
- *receive-string* represents to receive character string.
- *send-string* and *receive-string* appear in pairs; a script must begin with a send-string. For example, “send-string1 receive-string1 .....” represents this execution flow: First, the system sends send-string1 to the Modem and expects to receive receive-string1. If it receives a string matching receive-string1 before timing out, it continues the execution of subsequent script contents; otherwise, it terminates the execution of this script.
- If the last string is a send-string, it indicates that, once this string is sent, the execution of the script is terminated without waiting for any other receive-string.
- If it is unnecessary to send a string at the beginning of a script, and the system directly waits for a receive-string, you can set the first send-string to "", which will be explained later.
- Except for ended with “**\c**”, the send-string will be automatically appended with a carriage return when it is sent.
- The received content needs not exactly match the receive-string. That is, the match is considered successful as long as the received content contains the expected string.
- One receive-string can includes many character strings separated by ""-"". The match is considered successful as long as the received content contains one of these character strings.
- By default, the timer times out five seconds later after waiting for a receive-string. You can insert the **TIMEOUT** *seconds* anywhere in a script to adjust the timeout time waiting for receive-string, which is valid till a new **TIMEOUT** is set in the same script. For detailed description, seeTable 7-1:

Table 7-1 Script keywords

Keyword	Description
ABORT receive-string	The string following **ABORT** will be compared with the strings sent from the Modem or remote DTE device in exact matching mode. One script can includes multiple **ABORT** settings, and all of them take effect in the whole script execution process.
TIMEOUT seconds	The digit following **TIMEOUT** is used to set the timeout time that allows the system to wait for a receive-string. If no expected string is received within this time, the execution of the script fails. Once set, the settings will be valid till a new **TIMEOUT** is configured.

- All the strings and keywords in a script are case sensitive.
- Between strings or keywords, you should use spaces as separators. So a space contained in a string must be enclosed in a pair of double quotation marks (" "). A pair of empty quotation marks (that is, "") has two meanings: Being a leading "" in a script, it means that no string needs to be sent and the system directly waits for a receive-string. If "" locates in any other locations in the script, it is regarded as the content of a string.
- You can insert **ABORT** *receive-string* anywhere in a script to change the execution flow of this script. Its presence in the script indicates that the script execution will be terminated if a received string exactly matches the *receive-string* set by **ABORT** *receive-string*. You can set more than one **ABORT** *receive-string* in a script, all of they will take effect; that is, once a received string matches any one of them, the script execution is terminated. Wherever an **ABORT** *receive-string* is placed, it takes effect in the whole script execution process.
- You can insert escape characters in a script to further control the script and increase its flexibility. In addition, all the escape characters also play the role of delimiters in strings as well.

Table 7-2 Escape characters used in script

Escape character	Description
\c	Represents that the system does not automatically append a carriage return to the string; it sends only the specified characters in the string. The "\c" character is valid only when it is located at the end of the send-string.
\d	Represents a two-second pause.
\n	Represents the new line character.
\r	Represents the carriage return character.
\s	Represents the space character.

Escape character	Description
t	Represents the tabulation (Tab) character.
\\	Represents the backslash ("\") character.
T	Represents telephone number.

Example

```
[XE] script-string example "" AT OK ATS0=1 OK
```

7.1.10 start-script

Syntax

start-script *script-name number*

View

User view

Parameter

script-name: Name of a script in the script set.

number: Number of the interface on which the script is run.

Description

Use the **start-script** command to execute a specific script.

You can use this command to immediately execute a Modem script. But if there is already a script running on the interface, the system will not execute this command and will report an error.

Related command: **script-string**.

Example

Execute the Modem script "example" on interface 1.

```
<XE> start-script example 1
```

Chapter 8 License Management Commands

8.1 License Management Commands

8.1.1 xe-license

Syntax

xe-license *string*

undo xe-license { *string* | **all** }

View

System view

Parameter

string: The license string that contains 36 valid characters, divided into six groups by separators. Each group consists of six bits, forming the sting in the format of xxxxxx-xxxxxx-xxxxxx-xxxxxx-xxxxxx-xxxxxx, where each x is a valid character and can be any character in the following set:

{ *, #, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z }

-: Separator.

all: Deletes all license stings.

Description

Use the **xe-license** command to add service of a license to the current service data. Up to 128 licenses can be added. If continuous ten invalid licenses are inputted, the system will forbid any license input unless you restart it.

Use the **undo xe-license** command to delete the service of an added license from the service data, or to delete all service data.

Example

Add service in the license string 123456-899909-123456-789456-369852-258147 to the current service data.

```
[XE]xe-license 123456-899909-123456-789456-369852-258147
```

8.1.2 display xe-service

Syntax

display xe-service

View

Any view

Parameter

None

Description

Use the **display xe-service** command to display all services loaded on the XE IP PBX.

Example

Display all services loaded on the XE IP PBX.

```
[XE-ls]display xe-service
Current supported service by XEngine
 ID     Service Name            Status
-------------------------------------------------------
 No service
-------------------------------------------------------
 Total   0
```

Table 8-1 Description on the fields of the **display xe-service** command

Item	Description
ID	Service ID
Service Name	Service name
Status	Service status

IP Performance and Application

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Chapter 1 IP Performance Configuration Commands

1.1 IP Performance Configuration Commands

1.1.1 debugging ip

Syntax

debugging ip { **icmp** | **packet** | **error** }

undo debugging ip { **icmp** | **packet** | **error** }

View

User view

Parameter

icmp: ICMP debugging.

packet: IP connection debugging.

error: Error information debugging.

Description

Use the **debugging ip icmp** command to enable ICMP debugging.

Use the **undo debugging ip icmp** command to disable ICMP debugging.

Use the **debugging ip packet** command to enable IP connection debugging.

Use the **undo debugging ip packet** command to disable IP connection debugging.

Use the **debugging ip error** command to enable error information debugging.

Use the **undo debugging ip error** command to disable error information debugging.

Example

Enable IP connection debugging.

```
<XE> debugging ip packet
*0.13259300 XE2000 IP/8/debug_case:
Receiving, interface = GigabitEthernet0/0, version = 4, headlen = 20, tos =
0,
pktlen = 84, pktid = 3670, offset = 0, ttl = 255, protocol = 1,
checksum = 35761, s = 192.168.80.30, d = 192.168.80.50
prompt: Receiving IP packet from GigabitEthernet0/0
<XE> debugging ip icmp
```

```
  PING 192.168.80.30: 56  data bytes, press CTRL_C to break
*0.13372110 XE2000 IP/8/debug_icmp:
ICMP Send: echo(Type=8, Code=0), Dst = 192.168.80.30

    Reply from 192.168.80.30: bytes=56 Sequence=1 ttl=255 time=1 ms
*0.13372110 XE2000 IP/8/debug_icmp:
ICMP Receive: echo-reply(Type=0, Code=0), Src = 192.168.80.30, Dst =
192.168.80.
50
```

1.1.2 debugging tcp event

Syntax

debugging tcp event [*task_id socket_id*]

undo debugging tcp event [*task_id socket_id*]

View

User view

Parameter

task_id: Task ID.

socket_id: Socket ID.

Description

Use the **debugging tcp event** command to enable TCP event debugging.

Use the **undo debugging tcp event** command to disable TCP event debugging.

When executing this command to enable the debugging, the number of debugging you can enable is limited, that is, you can enable debugging of fixed number (the combination of task ID and socket ID) at one time, besides, a new socket will be created to establish connection if TCP is passively opened or receives connection request, and some applications such as Telnet server will create a new task to process the connection. So you must not use parameters *task_id* and *socket_id* if you want to get information on connection establishment.

Example

Enable TCP event debugging.

```
<XE> debugging tcp event
*0.13467370 XE2000 SOCKET/8/TCP EVENT:
1112118213: task = co0(8), socketid = 0,
TCPCB 0x239b1c04 created
```

```
*0.13467370 XE2000 SOCKET/8/TCP EVENT:
1112118213: task = co0(8), socketid = 1,
state Closed changed to Syn_Sent

*0.13467370 XE2000 SOCKET/8/TCP EVENT:
1112118213: task = co0(8), socketid = 1,
sending SYN, seq = 1724422400,
LA = 192.168.80.50:1033, FA = 192.168.80.30:23

*0.13467370 XE2000 SOCKET/8/TCP EVENT:
1112118213: task = co0(8), socketid = 1,
advertising MSS = 1460,
LA = 192.168.80.50:1033, FA = 192.168.80.30:23

Connected to 192.168.80.30 ...
*0.13467380 XE2000 SOCKET/8/TCP EVENT:
1112118213: task = co0(8), socketid = 1,
received MSS = 1460,
LA = 192.168.80.50:1033, FA = 192.168.80.30:23

*0.13467380 XE2000 SOCKET/8/TCP EVENT:
1112118213: task = co0(8), socketid = 1,
state Syn_Sent changed to Established
```

1.1.3 debugging tcp md5

Syntax

debugging tcp md5

undo debugging tcp md5

View

User view

Parameter

None

Description

Use the **debugging tcp md5** command to enable TCP connection md5 authentication debugging.

Use the **undo debugging tcp md5** command to disable TCP connection md5 authentication debugging.

Example

Enable TCP connection md5 authentication debugging.

```
<XE> debugging tcp md5
```

1.1.4 debugging tcp packet

Syntax

debugging tcp packet [*task_id socket_id*]

undo debugging tcp packet [*task_id socket_id*]

View

User view

Parameter

task_id: Task ID.

socket_id: Socket ID.

Description

Use the **debugging tcp packet** command to enable TCP connection packet debugging. The number of debugging you can enable is limited, that is, you can enable debugging of fixed number (the combination of task ID and socket ID) at one time.

Use the **undo debugging tcp packet** command to disable TCP connection debugging.

Example

Enable TCP connection debugging.

```
<XE> debugging tcp packet
```

1.1.5 debugging udp packet

Syntax

debugging udp packet [*task_id socket_id*]

undo debugging udp packet [*task_id socket_id*]

View

User view

Parameter

task_id: Task ID.

socket_ID: Socket ID.

Description

Use the **debugging udp packet** command to enable UDP connection debugging. The number of debugging you can enable is limited, that is, you can enable debugging of fixed number (the combination of task ID and socket ID) at one time.

Use the **undo debugging udp packet** command to disable UDP connection debugging.

Example

Enable UDP connection debugging.

```
<XE> debugging udp packet
```

1.1.6 display fib

Syntax

display fib

View

Any view

Parameter

None

Description

Use the **display fib** command to view the summary of the forward information base (FIB).

This command exports the FIB in a table. Each line represents a route, where the following information is included:

- Destination address/mask length
- Next hop
- Current flag, combination of G, H and U, where G represents Gateway, H represents Host (host route), and U to UP (available).
- Timestamp
- Output interface

Example

Display the summary of the FIB table.

```
<XE> display fib
Destination/Mask   Nexthop         Flag TimeStamp     Interface
192.168.80.50/32   127.0.0.1       GHU  t[0]          InLoopBack0
192.168.80.0/24    192.168.80.50   U    t[0]          GigabitEthernet0/0
127.0.0.0/8        127.0.0.1       U    t[0]          InLoopBack0
```

1.1.7 display fib begin

Syntax

display fib | [{ **begin** | **include** | **exclude** } *text*]

View

Any view

Parameter

text: A string.

Description

Use the **display fib** command to export lines that relate to string *text* in the buffer according to regular expression.

The **display fib** | **begin** *text* command displays all lines from the first line containing the string *text* to the end of the buffer.

The **display fib** | **include** *text* command displays lines containing the string *text*.

The **display fib** | **exclude** *text* command displays lines that do not contain the string *text*.

Example

Display all lines from the first line containing the string 169.254.0.0 to the end of the buffer.

```
<XE> display fib | begin 169.254.0.0
Destination/Mask      Nexthop      Flag    TimeStamp    Interface
169.254.0.0/16        2.1.1.1      U       t[0]         Ethernet1/0
2.0.0.0/16            2.1.1.1      U       t[0]         Ethernet1/0
127.0.0.0/8           127.0.0.1    U       t[0]         InLoopBack0
```

Display all lines containing the string Ethernet0.

```
<XE> display fib | include Ethernet1/0
Destination/Mask      Nexthop  Flag    TimeStamp        Interface
169.254.0.0/16        2.1.1.1  U       t[0]             Ethernet1/0
2.0.0.0/16            2.1.1.1  U       t[0]             Ethernet1/0
```

Display all lines that do not contain the string 169.254.0.0.

```
<XE> display fib | exclude 169.254.0.0
Destination/Mask      Nexthop      Flag    TimeStamp    Interface
2.0.0.0/16            2.1.1.1      U       t[0]         Ethernet1/0
127.0.0.0/8           127.0.0.1    U       t[0]         InLoopBack0
```

1.1.8 display fib longer

Syntax

display fib *dest-addr1* [*dest-mask1*] [**longer**]

display fib*dest-addr1 dest-mask1 dest-addr2 dest-mask2*

View

Any view

Parameter

dest-addr1: Destination IP address 1, in dotted decimal notation.

dest-mask1: Subnet mask of *dest-addr1*, in dotted decimal notation, or an integer representing the length of the subnet mask.

dest-addr2: Destination IP address 2, in dotted decimal notation.

dest-mask2: Subnet mask of *dest-addr2*, in dotted decimal notation, or an integer representing the length of the subnet mask.

Description

For this command, how the FIB table entries will be matched depends on how the parameters are set.

Use the **display fib** *dest-addr* command to display all the subnets if the destination address can find corresponding FIB table entry in the range of natural mask, otherwise displays the FIB table entry that best matches the destination address.

Use the **display fib** *dest-addr dest-mask* command to display the FIB table entries that exactly match the destination address and mask.

Use the **display fib** *dest-addr* **longer** command to display all the destination address FIB table entries that match the IP address of destination address in the range of natural mask.

Use the **display fib** *dest-addr dest-mask* **longer** command to display all the destination address FIB table entries that match the IP address in the range of the entered mask .

Use the **display fib** *dest-addr1 dest-mask1 dest-addr2 dest-mask2* command to display FIB table entries whose destination address within the range determined by the entered parameters *dest-addr1 dest-mask1* and *dest-addr2 dest-mask2* and the entries with the destination address matching the *dest-addr1 dest-mask1* and *dest-addre2 dest-mask2.*

Example

Display matched FIB table entries or best matched FIB table entries that are in the range of natural mask with destination address of 169.253.0.0.

```
[XE] display fib 192.168.80.30
```

```
  Route Entry Count: 1
Destination/Mask    Nexthop         Flag TimeStamp     Interface
192.168.80.0/24     192.168.80.40   U    t[0]          Ethernet0/0
```

Display FIB table entries whose destinations ranges from 169.254.0.0/16 to 169.254.0.6/16.

```
<XE> display fib 169.254.0.0 255.255.0.0 169.254.0.6 255.255.0.0
Destination/Mask      Nexthop      Flag     TimeStamp    Interface
169.254.0.1/16        2.1.1.1      U        t[0]         Ethernet1/0
```

1.1.9 display fib statistics

Syntax

display fib statistics

View

Any view

Parameter

None

Description

Use the **display fib statistics** command to display the total number of the FIB table entries.

Example

Display the total number of the FIB table entries.

```
<XE> display fib statistics
Route Entry Count : 30
```

1.1.10 display ip interface

Syntax

display ip interface [*interface-type interface-number* | **brief** *interface-type interface-number*]

View

Any view

Parameter

interface-type: Type of the interface.

interface-number: Number of the interface.

brief: Displays summary information.

Description

Use the **display ip interface** command to display information of IP interface.

By default, information of all IP interfaces will be displayed if no interface is specified.

Running this command will display all IP related information of the specified interface, which can help error diagnosing.

Related command: **display interface**.

Example

Display IP related information of interface GigabitEthernet 0/0.

```
<XE> display ip interface GigabitEthernet 0/0
GigabitEthernet0/0 current state :UP
Line protocol current state :UP
Internet Address is 192.168.80.50/24
Broadcast address : 192.168.80.255
The Maximum Transmit Unit : 1500 bytes
ip fast-forwarding incoming packets state is Enabled
ip fast-forwarding outgoing packets state is Enabled
input packets : 1635, bytes : 255090, multicasts : 3
output packets : 625, bytes : 26409, multicasts : 0
ARP packet input number:         114
  Request packet:                111
  Reply packet:                    3
  Unknown packet:                  0
TTL invalid packet number:         0
ICMP packet input number:         13
  Echo reply:                     10
  Unreachable:                     0
  Source quench:                   0
  Routing redirect:                0
  Echo request:                    0
  Router advert:                   0
  Router solicit:                  3
  Time exceed:                     0
  IP header bad:                   0
  Timestamp request:               0
  Timestamp reply:                 0
  Information request:             0
  Information reply:               0
  Netmask request:                 0
```

```
  Netmask reply:                   0
  Unknown type:                    0
DHCP packet deal mode:  global
```

Table 1-1 Descriptions on the fields of the **display ip interface** command

Field	Description
GigabitEthernet0/0 current state :	Current status of the interface
Link layer protocol current state :	Link layer protocol status of the interface
Internet Address is 192.168.80.50/24	IP address of the interface, where /24 means that the length of the mask is 24.
Broadcast address :	The broadcast address of the interface.
The Maximum Transmit Unit :	The maximum transmit unit.
input packets : bytes : multicasts :	The number of the received packets, bytes, and multicast packets.
output packets :bytes : multicasts :	The number of the sent packets, bytes, and multicast packets.
Directed-broadcast packets:	• Received packets: The number of the received broadcast packets that belong to local interface broadcast domain. • Sent packets: The number of the sent broadcast packets that belong to local interface broadcast domain. • Forwarded packets: The number of broadcast packets forwarded by the interface, 0 means the broadcast forwarding of the interface is not enabled. • Dropped packets: The number of broadcast packets dropped by the interface.
ARP packet input number:	Statistics of the received ARP packets, including the following: • Total number of ARP packets • The number of ARP request packets • The number of ARP response packets, • The number of ARP packets of unknown types As for non-Ethernet interfaces, the ARP statistics information is zero
TTL is invalid packet input number:	The number of the received packets with invalid TTL value. A TTL packet is regarded as invalid when its TTL value is 0 or 1.

Field	Description
ICMP packet input number:	The statistics of the received ICMP packets, including the following: • Total number of packets • ECHO response packets • Packets with unreachable destination • Packets with source address suppressed • Packets with route redirected • ECHO request packets • Route broadcasting packets • Route request packets • Timeout packets • Packets with wrong IP header • Timestamp request packets • Time tamp response packets • Information request packets • Information response packets • Mask request packets • Mask response packets • Packets of unknown types

1.1.11 display ip socket

Syntax

display ip socket [**socktype** *sock_type*] [*task_id socket_id*]

View

Any view

Parameter

sock_type: Type of the socket, 1 for tcp, 2 for udp, and 3 for raw ip.

task_id: Task ID.

socket_id: Socket ID.

Description

Use the **display ip socket** command to display information of all current system sockets.

Example

Display socket information of TCP type.

```
<XE> display ip socket socktype 1
SOCK_STREAM:
```

```
Task = VTYD(9), socketid = 1, Proto = 6,
LA = 0.0.0.0:23, FA = 0.0.0.0:0,
sndbuf = 4096, rcvbuf = 4096, sb_cc = 0, rb_cc = 0,
socket option = SO_ACCEPTCONN
socket state = SS_PRIV  SS_ASYNC
SOCK_DGRAM:
Task = ROUT(6), socketid = 1, Proto = 17,
LA = 0.0.0.0:0, FA = 0.0.0.0:0,
sndbuf = 9216, rcvbuf = 41600, sb_cc = 0, rb_cc = 0,
socket option = SO_UDPCHECKSUM
socket state = SS_PRIV  SS_ASYNC
SOCK_RAW:
Task = ROUT(6), socketid = 2, Proto = 2,
LA = 0.0.0.0, FA = 0.0.0.0,
sndbuf = 32767, rcvbuf = 32767, sb_cc = 0, rb_cc = 0,
socket option = 0,
socket state = SS_PRIV  SS_NBIO  SS_ASYNC
```

Following are the descriptions of the displayed information.

SOCK_STREAM: Type of the socket.

Proto: The protocol number used by the socket.

sndbuf: The size of the send buffer of the socket.

rcvbuf: The size of the receive buffer of the socket.

sb_cc: The size of current data in the send buffer. This value is useful only when TCP buffers data.

rd_cc: The size of current data in the receive buffer.

Display information of the socket with whose task ID is 8 and socket ID is 4.

```
<XE> display ip socket 8 4
Task = VTYD(8), socketid = 4, Proto = 6,
LA = 0.0.0.0:23, FA = 0.0.0.0:0,
sndbuf = 4096, rcvbuf = 4096, sb_cc = 0, rb_cc = 0,
socket option = SO_ACCEPTCONN
socket state = SS_PRIV  SS_ASYNC
```

1.1.12 display ip statistics

Syntax

display ip statistics

View

Any view

Parameter

None

Description

Use the **display ip statistics** command to display IP traffic statistics, IP sending and receiving, and packet encapsulating and decapsulating, which can help error diagnosing.

Related command: **display interface**, **display ip interface**, **reset ip statistics**.

Example

Display IP traffic statistics.

```
<XE> display ip statistics
  Input:   sum            7120            local            112
           bad protocol   0               bad format       0
           bad checksum   0               bad options      0
  Output:  forwarding     0               local            27
           dropped        0               no route         2
           compress fails 0
  Fragment:input          0               output           0
           dropped        0
           fragmented     0               couldn't fragment 0
  Reassembling:sum        0               timeouts         0
```

1.1.13 display tcp statistics

Syntax

display tcp statistics

View

Any view

Parameter

None

Description

Use the **display tcp statistics** command to display TCP traffic statistics.

This command displays traffic statistics of all current TCP connections. Statistics is composed of two parts: the sending part and the receiving part. Each part can be divided into different types of packets, such as repeatedly received packets, checking packets, error packets and so on. The command can also display statistics closely

related to the connection, such as the number of connection received, number of packets retransferred, number of keepalive probe packets and so on. Most of them are counted in packets; a few of them are in bytes.

Related command: **display tcp status**.

Example

Display TCP traffic statistics.

```
<XE> display tcp statistics
Received packets:
Total: 0
packets in sequence: 0 (0 bytes)
window probe packets: 0, window update packets: 0
checksum error : 0, bad offset : 0, too short : 0
duplicate packets : 0 (0 bytes),  partially duplicate packets : 0(0 bytes)
out-of-order packets : 0 (0 bytes)
packets with data after window : 0 (0 bytes)
packets after close : 0
ack packets:0 (0 bytes), duplicate ack packets:0, ack packets with unsend
data:0
Sent packets:
Total: 0
urgent packets: 0
control packets: 0 ( 0 RST)
window probe packets: 0, window update packets: 0
data packets : 0 (0 bytes), data packets retransmitted: 0 (0 bytes)
ack only packets : 0(0 delayed)
Total  retransmit timeout: 0, connections dropped in retransmit timeout: 0
Keepalive timeout: 0, keepalive probe: 0, dropped connections in keepalive:
0
Initiated connections: 0,  accepted connections: 0,established connections:
0
Closed connections: 0,( dropped: 0, embryonic dropped: 0)
Dropped packets with MD5 authentication : 0
Permitted packets with MD5 authentication : 0
```

1.1.14 display tcp status

Syntax

display tcp status

View

Any view

Parameter

None

Description

Use the **display tcp status** command to display the TCP connection status, through which you can monitor a TCP connection at any time.

Related command: **display local-user**.

Example

Display the TCP connection status.

```
[XE-ps] display tcp status
TCPCB     Local Add:port         Foreign Add:port       State
23a4ae04  192.168.80.50:2452     192.168.80.50:13579    Established
2399de44  192.168.80.50:13579    0.0.0.0:0              Listening
23a47404  192.168.80.50:13579    192.168.80.50:2451     Time_Wait
```

The output indicates that one TCP connection is set up, where the TCP control block number is 23a4ae04, the local IP address is 192.168.80.50, the local port is 2452, the remote IP address is 192.168.80.50, and the remote port is 13579.

1.1.15 display udp statistics

Syntax

display udp statistics

View

Any view

Parameter

None

Description

Use the **display udp statistics** command to display UDP traffic statistics.

This command displays traffic statistics of all current UDP connections. Statistics is composed of two parts: the sending part and the receiving part. Each part can be divided into different types of packets, such as checking packets, error packets, and so on. The command can also display statistics information closely related to the connection, such as the number of broadcast packets and so on. The information is counted in packets.

Related command: **reset udp statistics**.

Example

Display UDP traffic statistics.

```
<XE> display udp statistics
Received packet:
Total:0
checksum error:0
shorter than header:0, data length larger than packet:0
no socket on port:0
broadcast:0
not delivered, input socket full:0
input packets missing pcb cache:0
Sent packet:
Total:0
```

1.1.16 mtu

Syntax

mtu *mtu-size*

undo mtu

View

Interface view

Parameter

mtu-size: The maximum transmission unit (MTU) size of packets an interface can transmit without the need to fragment, ranging from 46 to 1500 bytes.

Description

Use the **mtu** command to set the MTU size of packets an interface can transmit.

Use the **undo mtu** command to remove the MTU setting of an interface.

By default, the MTU size is 1500 bytes.

Example

Set an MTU to 800.

```
[XE-Ethernet1/0] mtu 800
```

Restore to the default MTU value.

```
[XE-Ethernet1/0] undo mtu
```

1.1.17 reset ip statistics

Syntax

reset ip statistics

View

User view

Parameter

None

Description

Use the **reset ip statistics** command to clear IP statistics. It is necessary to clear IP statistics to perform a new calculating in some special cases.

Related command: **display ip interface**, **display ip statistics**.

Example

Clear IP statistics.

```
<XE> reset ip statistics
```

1.1.18 reset tcp statistics

Syntax

reset tcp statistics

View

User view

Parameter

None

Description

Use the **reset tcp statistics** command to clear TCP traffic statistics. The system displays nothing upon executing the command.

Related command: **display tcp statistics**.

Example

Clear TCP traffic statistics.

```
<XE> reset tcp statistics
```

1.1.19 reset udp statistics

Syntax

reset udp statistics

View

User view

Parameter

None

Description

Use the **reset udp statistics** command to clear UDP traffic statistics. The system displays nothing upon executing the command.

Example

Clear UDP traffic statistics.

```
<XE> reset udp statistics
```

1.1.20 tcp mss

Syntax

tcp mss *value*

undo tcp mss

View

Interface view

Parameter

value: The maximum size of a TCP packet fragment, in the range from 128 to 2048.

Description

Use the **tcp mss** command to configure TCP packet fragmentation.

Use the **undo tcp mss** to remove TCP packet fragmentation.

Because the default MTU size is 1500 bytes, the sum of the encrypted packet header, overhead of link layer, IP header and the TCP packet should be less than 1500 bytes, so it is ideal to set the TCP packet fragment to 1200.

By default, TCP packets are not fragmented.

Example

Set the maximum size of a TCP packet fragment to 300.

```
[XE-Ethernet1/0] tcp mss 300
```

1.1.21 tcp timer fin-timeout

Syntax

tcp timer fin-timeout *time-value*

undo tcp timer fin-timeout

View

System view

Parameter

time-value: The value of TCP finwait timer, in seconds, in the range from 76 to 3600.

Description

Use the **tcp timer fin-timeout** command to set the TCP finwait timer.

Use the **undo tcp timer fin-timeout** command to restore the TCP finwait timer to its default value.

By default, the TCP finwait timer is set to 675 seconds.

When the TCP connection status changes from FIN_WAIT_1 to FIN_WAIT_2, the finwait timer is started. If no FIN packet is received before finwait timer times out, the TCP connection will be terminated.

It is recommended that you configure this parameter under the guidance of technicians.

Related command: **tcp timer syn-timeout**, **tcp window**.

Example

Set the value of the Tcp finwait timer to 600.

```
[XE] tcp timer fin-timeout 600
```

1.1.22 tcp timer syn-timeout

Syntax

tcp timer syn-timeout *time-value*

undo tcp timer syn-timeout

View

System view

Parameter

time-value: The value of the TCP synwait timer, in seconds, in the range from 2 to 600.

Description

Use the **tcp timer syn-timeout** command to set the TCP synwait timer.

Use the **undo tcp timer syn-timeout** command to restore the TCP synwait timer to its default value.

By default, the TCP synwait timer is set to 75 seconds.

When sending syn packets, the synwait timer is started. If no response packet is received before synwait times out, the TCP connection will be terminated.

It is recommended that you configure this parameter under the guidance of technicians.

Related command: **tcp timer fin-timeout**, **tcp window**.

Example

Set the value of the TCP synwait timer to 70.

```
[XE] tcp timer syn-timeout 70
```

1.1.23 tcp window

Syntax

tcp window *window-size*

undo tcp window

View

System view

Parameter

window-size: The size of the receive/send buffer of a connection oriented socket, in kilobytes, in the range from 1 to 32,.

Description

Use the **tcp window** command to set the size of the receive/send buffer of a connection oriented socket.

Use the **undo tcp window** command to restore the size of socket receive/send buffer to its default value.

By default, the receive/send buffer size of a connection-oriented socket is 8 KB.

It is recommended that you configure this parameter under the guidance of technicians.

Related command: **tcp timer fin-timeout**, **tcp timer syn-timeout**.

Example

Set the receive/send buffer size of a connection oriented socket to 4 KB.

```
[XE] tcp window 4
```

Chapter 2 IP Application Configuration Commands

2.1 IP Application Configuration Commands

2.1.1 arp static

Syntax

arp static *ip-address mac-address*

undo arp *ip-address*

View

System view

Parameter

ip-address: IP address of the ARP mapping entry, in dotted decimal notation.

mac-address: Ethernet MAC address of ARP mapping entry. Its format is H-H-H, where H is a hexadecimal number in the range of 1 digit to 4 digits.

Description

Use the **arp static** command to configure the ARP mapping table.

Use the **undo arp** command to delete the mapping entry corresponding to an address in the ARP mapping table.

By default, the ARP mapping table of the system is empty and the address mapping can be obtained through dynamic ARP.

Normally, ARP mapping table is maintained by dynamic ARP protocol, and manual configuration is needed in some special cases. Besides, ARP mapping table is used for LAN only.

Related command: **reset arp**, **display arp**.

Example

Configure the Ethernet MAC address corresponding to the IP address 129.102.0.1 to e0-fc01-0.

```
[XE] arp static 129.102.0.1 e0-fc01-0
```

Configure the Ethernet MAC address corresponding to the IP address 11.0.0.1 to aa-fcc-12.

```
[XE] arp static 11.0.0.1 aa-fcc-12
```

2.1.2 debugging arp packet

Syntax

debugging arp packet

undo debugging arp packet

View

User view

Parameter

None

Description

Use the **debugging arp packet** command to enable ARP packets debugging.

Use the **undo debugging arp packet** command to disable ARP packets debugging.

Example

Enable ARP packets debugging.

```
<XE> debugging arp packet
```

2.1.3 display arp

Syntax

display arp [**static** | **dynamic** | **all** | | { **begin** *text* | **exclude** *text* | **include** *text* }]

View

Any view

Parameter

static: Indicates to display the static ARP entries.

dynamic: Indicates to display the dynamic ARP entries.

all: Indicates to display all the ARP entries.

|: Indicates to display the entries that match the string *text*.

begin: Indicates to display the entries that start with the string *text*.

exclude: Indicates to display the entries that do not contain the string *text*.

include: Indicates to display the entries that contain the string *text*.

text: Regular expression.

Description

Use the **display arp** command to display the ARP mapping table.

By default, all ARP entries are displayed.

Related command: **arp static**, **reset arp**.

Example

Display all the ARP entries.

```
<XE> display arp
            Type: S-Static   D-Dynamic
IP Address      MAC Address    Type             Interface
192.168.80.30   00e0-fc20-2180 D                GE0/0
192.168.80.100  00b0-d0bc-f323 D                GE0/0
```

There are two mapping entries in the example above. Take the first entry as an example. It displays the IP address 192.168.80.30 and MAC address 00e0-fc20-2180, which is acquired through configuring static ARP.

2.1.4 display ip interface

Syntax

display ip interface *interface-type interface-number*

View

Any view

Parameter

interface-type: Interface type.

interface-number: Interface number.

Description

Use the **display ip interface** command to display the current health of all interfaces.

Example

Display the health of the interface Ethernet1/0.

```
<XE> display ip interface Ethernet1/0
Ethernet1/0 current state : UP
Line protocol current state : UP
Internet Address : 5.5.5.5/8
Broadcast address : 0.0.0.0
The Maximum Transmit Unit : 1500 bytes
input packets : 1231, bytes : 57557, multicasts : 1177
```

```
output packets : 0, bytes : 0, multicasts : 0
```

2.1.5 ip host

Syntax

ip host *hostname ip-address*

undo ip host *hostname* [*ip-address*]

View

System view

Parameter

hostname: Name of a host, a character string in the range from 1 to 20.

ip-address: IP address corresponding to the host name, can be class A,B,C or D.

Description

Use the **ip host** command to configure the entries of the static domain name resolution table, that is, the host names and their corresponding IP addresses.

Use the **undo ip host** command to remove the mapping between a host name and an IP address.

Each hostname can have only one corresponding IP address.

The hostname can be comprised of lower and upper letters a to z and A to Z, number 0 to 9, hyphen (-) and dot (.). Note that at least an English letter should be in the hostname.

By default, the static domain name table is empty, that is, there is no host name corresponding to any IP address.

Example

Configure the IP address corresponding to the host name router1 to 10.110.0.1.

```
[XE] ip host router1 10.110.0.1
```

Configure the IP address corresponding to the host name router2 to 10.110.0.2.

```
[XE] ip host router2 10.110.0.2
```

Configure the IP address corresponding to the host name router3 to 10.110.0.3.

```
[XE] ip host router3 10.110.0.3
```

Remove the mapping between the host name router2 and the IP address 10.110.0.2.

```
[XE] undo ip host router2 10.110.0.2
```

2.1.6 reset arp

Syntax

reset arp [**all** | **dynamic** | **static** | **interface** *interface-type interface-number*]

View

User view

Parameter

static: Indicates to clear the static ARP entries.

dynamic: Indicates to clear the dynamic ARP entries.

all: Indicates to clear all the ARP entries.

interface: Indicates the selected interface.

interface-type: Interface type.

interface-number: Interface number.

Description

Use the **reset arp** command to clear the ARP entries in the ARP mapping table.

By default, if *slot-number* is not specified, all ARP entries are cleared.

When the operation is performed on the interface with specified **interface**, the interface type can only be Ethernet or virtual Ethernet, and only the **dynamic** entries of the interface can be deleted.

Related command: **arp static**, **display arp**.

Example

Delete the **dynamic** entries in the ARP mapping table of the interface Ethernet1/0.

```
<XE> reset arp interface Ethernet1/0
```

Media Server

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Chapter 1 MS Configuration Commands

1.1 MS Configuration Commands

1.1.1 display location-server media-server

Syntax

display location-server media-server { *ms -id* | **all** | **list** }

View

Any view

Parameter

ms-id: ID of the MS to be displayed, 32-character string-length limitation.

all: Displays the information of all the MSs managed by the LS.

list: Lists all the MSs managed by the LS.

Description

Use the **display location-server media-server** command to display the information of one or all the MSs managed by the LS.

Example

Display the MS “media001” managed by the LS.

```
[XE-ls]display location-server media-server media001
------------ Media Server Information ------------
 Identifier:                  media001
 Ip-address:                      1.1.1.31
 Heartbeat Password:              phoenix
 Language:                        Chinese
 Status:                          Authorized
```

Table 1-1 Description on the fields of the **display location-server media-server** command

Field	Description
Identifier	ID of the displayed MS
Ip-address	IP address of the MS
Heartbeat Password	Heartbeat password between the MS and LS

Field	Description
Language	Language type supported by the MS
Status	Status of the MS

1.1.2 display media-server location-server status

Syntax

display media-server location-server status

View

Any view

Parameter

None

Description

Use the **display media-server location-server status** command to display the status of the LS that manages the current MS.

Example

Display the status of the LS that manages the current MS.

```
[XE-ls]display media-server location-server status
---------- Location Server Information ----------
Mode:                              Local
Ip-address:                        1.1.1.31:13579
MS HeartBeat Key:                  phoenix
Heartbeat Status:                  Authorized
```

Table 1-2 Description on the fields of the **display media-server location-server status** command

Field	Description
Mode	LS mode of the MS
Ip-address	IP address of the LS that manages the current MS
MS HeartBeat Key	Heartbeat password between the MS and LS
Heartbeat Status	Current MS status

1.1.3 heartbeat password

Syntax

heartbeat password *password*

undo heartbeat password

View

MS view

Parameter

password: Heartbeat password between the MS and the LS, case sensitive, containing 1 to 16 characters.

Description

Use the **heartbeat password** command to configure the heartbeat password between the MS and LS.

Use the **undo heartbeat password** command to restore the default heartbeat password.

By default, the heartbeat password is “XEngine”.

Example

Set the heartbeat password between the MS and LS to “xe2000”.

```
[XE-ms]heartbeat password xe2000
```

1.1.4 language

Syntax

language { **chinese | english** }

undo language

View

MS view

Parameter

chinese: Specifies Chinese as the language to be used on the MS.

english: Specifies English as the language to be used on the MS.

Description

Use the **language** command to configure the current language type to be used on the MS.

Use the **undo language** command to remove the current language type used by the MS.

By default, no language type is configured for the MS.

Example

Configure the MS to use English.

```
[XE-ms]language english
```

1.1.5 ls-mode

Syntax

ls-mode { **local** | { **remote ip-address** *ip-address* [**port** *port*]} }

View

MS view

Parameter

local: Uses a local LS.

remote: Uses a remote LS.

ip-address: IP address of the remote LS.

port: Port number of the remote LS. The default value is 13579.

Description

Use the **ls-mode** command to specify the LS for the MS. The default setting is local, namely, the local LS.

Example

Specify a remote LS for the MS. The IP address of the remote LS is 10.1.5.6.

```
[XE-ms]ls-mode remote ip-address 10.1.5.6
```

1.1.6 media-server

Syntax

media-server

View

System view

Parameter

None

Description

Use the **media-server** command to enter MS view.

Example

Enter MS view.

[XE]media-server

[XE-ms]

1.1.7 ms-config

Syntax

ms-config *ms-id* **interface** *interface-type interface-number*

undo ms-config

View

MS view

Parameter

ms-id: ID of the MS, 32-character string-length limitation.

interface-type: Type of the interface used by the MS.

*interface-numbe*r: Number of the interface used by the MS.

Description

Use the **ms-config** command to configure the basic information of the MS.

Use the **undo ms-config** command to delete the basic information of the MS.

By default, the MS ID is “MS”.

Example

Configure the MS ID to “ms1@h3c” and configure the MS interface to GigabitEthernet0/0.

```
[XE-ms]ms-config ms1@h3c interface GigabitEthernet 0/0
```

1.1.8 start

Syntax

start

View

MS view

Parameter

None

Description

Use the **start** command to start the MS.

Example

Start the MS.

```
[XE-ms]start
```

1.1.9 stop

Syntax

stop

View

MS view

Parameter

None

Description

Use the **stop** command to stop the MS.

Example

Stop the MS.

```
[XE-ms]stop
```

Chapter 2 Media Resource Configuration Commands

2.1 Media Resource Management Configuration Commands

2.1.1 display media-server media-resource

Syntax

display media-server media-resource { *media-id* | *media-file-path* | **all** }

View

Any view

Parameter

Media-id: Media resource ID, 32 integers, ranging from 0 to 2147483647. Note that digits 0 to 10000 are media resource IDs reserved by the system, and cannot be deleted randomly.

media-file-path: Full path of the media resource files to be displayed, case-sensitive, consisting of 1 to 255 characters..

all: Displays all media resource information.

Description

Use the **display media-server media-resource** command to display the media resource information on the MS.

Example

Display all media resource information.

```
[XE-ls] display media-server media-resource all
1001            Chinese                 G711a
/wav/1001.wav
```

The information above includes, from top down, the media resource ID, the language type of the media resource, the media format, and the full path of the media resource.

2.1.2 display media-server media-resource predefine

Syntax

display media-server media-resource predefine { **format** | **language** }

View

Any view

Parameter

format: Displays the predefined media format type.

language: Displays the predefined language type.

Description

Use the **display media-server media-resource predefine** command to display the predefined media resource values.

Example

Display the predefined language type.

```
[XE]display media-server media-resource predefine language
Chinese
English
```

2.1.3 format

Syntax

format *format-string*

undo format { *format-string* | **all** }

View

Language view

Parameter

format-string: Media format. The value is **G711a**, **G711u**, **G7231**, or **G729**.

all: Deletes all the media formats.

Description

Use the **format** command to configure the media resource format supported by the language type and enter format view.

Use the **undo format** command to delete all the media resource formats supported by the language type.

Example

Enable G711a support in the Chinese mode.

```
[XE-ma-Chinese]format G711a
```

2.1.4 language

Syntax

language *language*

undo language { *language* | **all** }

View

Media-ability view

Parameter

language: Language type. The value is **Chinese** or **English**.

- **Chinese**: Enters Chinese language view.
- **English**: Enters English language view.

all: Deletes all the configuration supported by the language type.

Description

Use the **language** command to enter the specified language view.

Use the **undo language** command to delete all the configuration supported by the corresponding language type, or delete all the configuration supported by all the language types.

Example

Enter Chinese language view.

```
[XE-ma]language Chinese
[XE-ma-Chinese]
```

2.1.5 media-ability

Syntax

media-ability

View

System view

Parameter

None

Description

Use the **media-ability** command to enter media-ability view.

Example

Enter media-ability view.

```
[XE]media-ability
[XE-ma]
```

2.1.6 set-media

Syntax

set-media *media-id media-file-path*

undo set-media { *media-id* | **all** }

View

Enter format view.

Parameter

media-id: Media resource ID, in the range of 0 to 2147483647. The range of 0 to 10000 is reserved for system use. You are not recommended to change the IDs in this range.

media-file-path: Path (excluding the drive letter) and name of the media resource file, containing 1 to 255 case-sensitive characters.

all: Deletes all the media resource IDs.

Description

Use the **set-media** command to configure the media resource ID supported by the current media resource format.

Use the **undo set-media** command to delete the specified media resource ID or all the media resource IDs supported by the current media resource format.

Example

Configure a media source in the G711a format in the Chinese mode. The media resource ID is 10001. The media resource file is in the flash:/voice_resource/ directory. The file name is 10001.wav.

```
[XE-ma-Chinese-G711a]set-media 10001 /voice_resource/10001.wav
```

Chapter 3 LS-Side MS Configuration Commands

3.1 MS Configuration Commands (on the LS)

3.1.1 heartbeat password (LS-MS view)

Syntax

heartbeat password *password*

undo heartbeat password

View

LS-MS view

Parameter

password: Heartbeat password between the MS and the LS, containing 1 to 16 characters, case insensitive.

Description

Use the **heartbeat password** command to configure the heartbeat password between the MS and LS on the LS.

Use the **undo heartbeat password** command to restore the default heartbeat password.

By default, the heartbeat password is “XEngine”.

Example

Set the heartbeat password between the LS and the MS “media01”to “xe2000” on the LS.

```
[XE-ls-ms-media01]heartbeat password xe2000
```

3.1.2 language (LS-MS view)

Syntax

language *language*

undo language

View

LS-MS view

Parameter

language: Language type supported by the MS. The value is **Chinese** or **English**.

Description

Use the **language** command to configure the current language type on the LS for the MS to play voice prompt.

Use the **undo language** command to remove the current language type.

By default, no language type supported by the MS is configured.

Example

Configure the MS “media01” to use English as the current language type for playing voice prompt on the LS.

```
[XE-ls-ms-media01]language English
```

3.1.3 media-server

Syntax

media-server *ms-id*

undo media-server { *ms-id* | **all** }

View

LS view

Parameter

ms-id: ID of the MS, 32-character string-length limitation. It is case sensitive.

all: Deletes all the MSs managed by the LS.

Description

Use the **media-server** command to add an MS and enter LS-MS view on the LS. If the MS already exists, this command lets you enter the LS-MS view corresponding to that MS directly.

Use the **undo media-server** command to delete the MS managed by the LS.

Example

Configure a media server with the ID of “ms1@h3c” in LS view and enter the LS-MS view corresponding to the MS.

```
[XE-ls]media-server ms1@h3c
[XE-ls-ms-ms1@h3c]
```

Call Services

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Chapter 1 Voice Service Configuration Commands

1.1 Voice Service Configuration Commands

1.1.1 service

Syntax

service

View

LS view

Parameter

None

Description

Use the **service** command to enter LS-service view.

Example

Enter LS-service view.

```
[XE-ls]service
[XE-ls-srv]
```

1.1.2 srv-switch

Syntax

srv-switch { **adi** | **alarm** | **announce** | **cb** | **cba** | **cf-caller** | **cfb** | **cfnr** | **cfo** | **cft** | **cfu** | **ci** | **clip** | **clir** | **cp** | **cpcp** | **ct** | **do-not-disturb** | **group-limited-call** | **gui** | **limited-time-call** | **myring** | **pwd-call** | **query-self** | **rio** | **tcir** } { **on** | **off** }

View

Subscriber number view

Parameter

adi: Dialing test service, which defaults to **on**.

alarm: Alarm clock service.

announce: Time announcement service.

cb: Callback-on-busy service.

cba: Call out restriction service, which defaults to **on**.

cf-caller: Call forwarding by the caller number service, which defaults to **on**.

cfb: Call forwarding on busy (CFB) service, which defaults to **on**.

cfnr: Call forwarding no reply (CFNR) service, which defaults to **on**.

cfo: Call forwarding offline (CFO) service, which defaults to **on**.

cft: Call forwarding based on time range (CFT) service, which defaults to **on**.

cfu: Call forwarding unconditional (CFU) service, which defaults to **on**.

ci: Call intervention service.

clip: Calling line identification presentation (CLIP) service, which defaults to **on**.

clir: Calling line identification restriction (CLIR) service.

cp: Call pickup service.

cpcp: Call park/call pickup service.

ct: Call transfer service.

do-not-disturb: Do-not-disturb service.

group-limit-call: Inter-group call restriction service, which defaults to **on**.

gui: Graphical user interface, which defaults to **on**.

limited-time-call: Time limit call service.

myring: MyRing service.

pwd-call: Password call service.

query-self: Local number query service.

rio: CLIR override service.

tcir: Temporary reservation for CLIR service.

Description

Use the **srv-switch** command to enable/disable the voice service.

Example

Enable the customized ring service for the user 900 under the gateway gw0.

```
[XE-ls-gw-gw0 #0 900] srv-switch myring on
```

Chapter 2 User Management Configuration Commands

2.1 User Management Configuration Commands

2.1.1 sscb-manage

Syntax

sscb-manage

View

Subscriber number view

Parameter

None

Description

Use the **sscb-manage** command to enter user management service view.

Example

Enter user management service view.

```
[XE-ls-gw-gw02 #1 1001]sscb-manage
```

2.1.2 subscriber-status

Syntax

subscriber-status { **normal** | **callout** | **callin** | **forbid** }

View

User management service view

Parameter

normal: The user is in normal status and can make incoming or outgoing calls after startup or rebooting.

callout: The user can only make outgoing calls, but no incoming calls.

callin: The user can only make incoming calls, but no outgoing calls.

forbid: The user can make neither incoming calls nor outgoing calls.

Description

Use the **subscriber-status** command to configure user status.

The user status defaults to **normal**.

Example

Configure the user in **callin** status.

```
[XE-ls-gw-gw02 #1 1001-ssbm]subscriber-status callin
```

Chapter 3 Emergency Call Configuration Commands

3.1 Emergency Call Configuration Commands

3.1.1 emergency-call

Syntax

emergency-call

View

LS view

Parameter

None

Description

Use the **emergency-call** command to enter emergency call service view.

Example

Enter emergency call service view.

```
[XE-ls]emergency-call
[XE-ls-emgc]
```

3.1.2 emergency-call-number

Syntax

emergency-call-number *emergency-prefix*

undo emergency-call-number { *emergency-prefix* | all}

View

Emergency call service view

Parameter

all: Removes all emergency call numbers.

emergency-prefix: Emergency call number or the corresponding regular expression. It consists of 31 characters at most, and these characters can be used: ^(\+)!(([0-9ABCD#*.!+%[]()\-])+(\$)!)$.

The system judges an emergency call number by comparing it with all other emergency call numbers and their regular expressions.

A regular expression is a character string in formula form. For example, 1…$ means matching all four-digit call numbers starting with 1.

Table 3-1 describes the special characters used in regular expression.

Table 3-1 Special characters in regular expressions

Character	Description
.	Indicates to match any single character, including a blank space.
!	Indicates that the subset of the regular expression can be repeated for zero times or once.
%	Indicates that the subset of the regular expression can be repeated for zero or multiple times.
+	Indicates that the subset of the regular expression can be repeated once or for multiple times.
^	Indicates that the regular expression can be matched only when it is at the beginning of a line.
$	Indicates that the regular expression can be matched only when it is at the end of a line.
-	Connects the maximum and minimum of a range. For example, 1-9 stands for the range of 1 to 9 when they appear in [].
[]	Character range. For example, [1-36A] stands for optional characters 1, 2, 3, 6 or A.
()	A group of characters. For example, (123A) stands for string 123A.

Note:

The brackets [ ] and parentheses ( ) must be in complete form. A bracket pair cannot include another bracket or parenthesis pair; a parenthesis pair cannot include another parenthesis pair; but a parenthesis pair can include another bracket pair.

Description

Use the **emergency-call-number** command to add an emergency call number (a number or a number regular expression). Up to 16 emergency call numbers can be added.

Use the **undo emergency-call-number** command to remove the specified or all emergency call numbers.

Example

Add emergency call regular expression 11..

```
[XE-ls-emgc] emergency-call-number 11..
```

Chapter 4 Inter-Group Call Restriction Configuration Commands

4.1 Inter-Group Call Restriction Configuration Commands

4.1.1 call-limit-group

Syntax

call-limit-group

View

LS view

Parameter

None

Description

Use the **call-limit-group** command to enter call limit group view.

Example

Enter call limit group view.

```
[XE-ls]call-limit-group
[XE-ls-clg]
```

4.1.2 change

Syntax

change *old-group-name new-group-name*

View

Call limit group view

Parameter

old-group-name: Old name of the call limit group, which is case-sensitive and consists of 16 characters at most.

new-group-name: New name of the call limit group, which is case-sensitive and consists of 16 characters at most.

Description

Use the **change** command to change the name of a call limit group.

Example

Rename the call limit group beijing as beijing-group.

```
[XE-ls-clg]change beijing beijing-group
```

4.1.3 display location-server call-limit-group

Syntax

display location-server call-limit-group

View

Any view

Parameter

None

Description

Use the **display location-server call-limit-group** command to display lists of all call limit groups.

Example

Display lists of all call limit groups.

```
[XE-ls-clg]display location-server call-limit-group
  normal-table
  black-table
  white-table
  shanghai
  beijing
```

Note:

In information for the **display location-server call-limit-group** command, the normal-table, black-table and white-table are the reserved call limit groups.

4.1.4 display location-server call-limit-group

Syntax

display location-server call-limit-group *call-limit-group1* { *call-limit-group2* | **callin** | **callout** | **subscriber** }

View

Any view

Parameter

call-limit-group1: Name of the call limit group, which is case-sensitive and consists of 16 characters at most.

call-limit-group2: Name of the call limit group, which is case-sensitive and consists of 16 characters at most.

callin: Displays all the groups that can call the current group.

callout: Displays all the groups that the current group can call.

subscriber: Displays all member numbers in the call limit group.

Description

Use the **display location-server call-limit-group** command to display

- All member numbers in the call limit group
- All outgoing call limit groups for the current group
- All incoming call limit groups for the current group
- The call limit relationship between two groups.

Example

Display the call limit relationship between groups beijing and shanghai.

```
<XE>display location-server call-limit-group beijing shanghai
  Group beijing CAN'T call Group shanghai
  Group shanghai CAN call Group beijing
```

4.1.5 display location-server call-limit-group bind

Syntax

display location-server call-limit-group bind

View

Any view

Parameter

None

Description

Use the **display location-server call-limit-group bind** command to display the call limit relationship between all call limit groups.

Example

Display the call limit relationship between all call limit groups.

```
[XE-ls-clg] display location-server call-limit-group bind
  Group normal-table CAN'T call(1)
    Group: black-table
  Group black-table CAN'T call(7):
    Group: normal-table
    Group: black-table
    Group: white-table
    Group: g1
    Group: g2
    Group: g3
    Group: g4
  Group white-table CAN'T call(0):
  Group g1 CAN'T call(3):
    Group: black-table
    Group: g3
    Group: g4
  Group g2 CAN'T call(2):
    Group: black-table
    Group: g4
  Group g3 CAN'T call(1):
    Group: black-table
  Group g4 CAN'T call(1):
    Group: black-table
```

This command displays information in the following format:

```
Group group-caller CAN'T call(limit-call-group-number):
  Group: group-callee1
  Group: group-callee2
```

group-caller refers to the call limit group the caller is in; *limit-call-group-number* refers to the number of the call limit groups *group-caller* cannot call; *group-callee1, group-callee2* and the like represent the call limit groups *group-caller* cannot call.

4.1.6 forbid

Syntax

forbid { *src-call-limit-group* | **all** } **call** { *dst-call-limit-group* | **all** }

undo forbid { *src-call-limit-group* | **all** } **call** { *dst-call-limit-group* | **all** }

View

Call limit group view

Parameter

src-call-limit-group: Name of the call limit group for the caller, which is case-sensitive and consists of 16 characters at most.

dst-call-limit-group: Name of the call limit group for the called, which is case-sensitive and consists of 16 characters at most.

Description

Use the **forbid** command to define the call limit relationship between groups.

Use the **undo forbid** command to remove the call limit relationship between groups.

The **forbid** *src-call-limit-group* **call** *dst-call-limit-group* command defines a call limit entry that mean the *src-call-limit-group* cannot call the *dst-call-limit-group*.

The **undo forbid** *src-call-limit-group* **call** *dst-call-limit-group* command removes the call limit entry that means the *src-call-limit-group* cannot call the *dst-call-limit-group*.

The **forbid all call** *dst-call-limit-group* command defines multiple call limit entries that mean all normal groups (except the normal-table group) cannot call the *dst-call-limit-group*.

The **undo forbid all call** *dst-call-limit-group* command removes multiple call limit entries that mean all normal groups cannot call the *dst-call-limit-group*.

The **forbid** *src-call-limit-group* **call all** command defines multiple call limit entries that mean the *src-call-limit-group* cannot call all normal groups (except the normal-table group).

The **undo forbid** *src-call-limit-group* **call all** command removes multiple call limit entries that mean the *src-call-limit-group* cannot call all normal groups.

The **forbid all call all** command defines multiple call limit entries that mean users in normal groups (except the normal-table group) cannot call each other either inside or between groups.

The **undo forbid all call all** command removes multiple call limit entries and restore the default call limit relationship.

The call limit relationship is unidirectional: Although the *src-call-limit-group* cannot call the *dst-call-limit-group*, the *dst-call-limit-group* still can call the *src-call-limit-group*.

By default, any two groups can make calls to each other.

Example

Configure that group beijing cannot call group shanghai.

```
[XE-ls-clg]forbid beijing call shanghai
```

4.1.7 limited-call-group (subscriber number view)

Syntax

limited-call-group

View

Subscriber number view

Parameter

None

Description

Use the **limited-call-group** command to enter call limit group service view.

Example

Enter call limit group service view.

```
[XE-ls-gw-curcfggw #1 1000]limited-call-group
[XE-ls-gw-curcfggw #1 1000-lcg]
```

4.1.8 limited-call-group (call limit group view)

Syntax

limited-call-group *limited-call-group*

undo limited-call-group

View

Call limit group view

Parameter

limited-call-group: Name of the call limit group for the current user, which is case-sensitive and consists of 16 characters at most.

Description

Use the **limited-call-group** command to add a user to a call limit group.

Use the **undo limited-call-group** command to remove a user from a call limit group.

By default, the user is not added to any call limit group.

Example

Add user 1000 to call limit group beijing.

```
[XE-ls-gw-curcfggw #1 1000-lcg]limited-call-group beijing
```

4.1.9 limited-group

Syntax

limited-group *call-limit-group-name*

undo limited-group { *call-limit-group-name* | **all** }

View

Call limit group view

Parameter

call-limit-group-name: Name of the call limit group, which is case-sensitive and consists of 16 characters at most.

all: Removes all call limit groups.

Description

Use the **limited-group** command to add a call limit group. Up to 64 call limit groups can be set.

Use the **undo limited-group** command to remove specified or all call limit groups. The reserved groups white-table, black-table and normal-table cannot be removed.

Example

Add call limit group beijing.

```
[XE-ls-clg]limited-group beijing
```

4.1.10 srv-switch group-limited-call

Syntax

srv-switch group-limited-call {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables call limit group service.

off: Disables call limit group service.

Description

Use the **srv-switch group-limited-call** command to enable or disable call limit group service.

By default, call limit group service is enabled.

Example

Enable call limit group service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch group-limited-call on
```

Chapter 5 Outgoing Call Authority Configuration Commands

5.1 Outgoing Call Authority Configuration Commands

5.1.1 cba

Syntax

cba

View

Subscriber number view

Parameter

None

Description

Use the **cba** command to enter outgoing call authority service view.

Example

Enter outgoing call control service view.

```
[XE-ls-gw-gw01 #1 1001]cba
[XE-ls-gw-gw01 #1 1001-cba]
```

5.1.2 display location-server subscriber-role

Syntax

display location-server subscriber-role { *role* | **all** }

View

Any view

Parameter

role: User role, which is case-sensitive and consists of 32 characters at most.

all: Displays all user role information.

Description

Use the **display location-server subscriber-role** command to display all the user number types that the user role can call.

Example

Display all the user number types that user role sales can call.

```
[XE-ls-ssbr-sales]display location-server subscriber-role sales
role: default
role: sales
         mobile
```

Display the user number types that all user roles can call.

```
[XE-ls-ssbr-rnd]display location-server subscriber-role all
role: sales
          mobile
role: rnd
          rnd-phone
```

Information displays as follows:

```
role: role1
          type11
          type12
    ….
role: role2
          type21
          type22
    …
```

role1 and role2 represent the user role; type11 and type12 represent the user number role1 supports; type21 and type22 represent the user number type role2 supports.

5.1.3 display location-server subscriber-type

Syntax

display location-server subscriber-type [*subscriber-type*]

View

Any view

Parameter

subscriber-type: User number type, which is case-sensitive and consists of 32 characters at most.

Description

Use the **display location-server subscriber-type** command to display all user number types configured in the system.

Use the **display location-server subscriber-type** *subscriber-type* command to display the regular expressions that correspond to the specified user number type.

Example

Display all user number types configured in the system.

```
<XE> display location-server subscriber-type
  mobile
```

Display the regular expressions that correspond to user number type mobile.

```
<XE>display location-server subscriber-type mobile
  136
  137
  138
  139
```

From information above, we can see the user number type mobile matches regular expressions 136,137,138 and 139.

5.1.4 srv-switch cba

Syntax

srv-switch cba {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables outgoing call control service.

off: Disables outgoing call control service.

Description

Use the **srv-switch cba** command to enable/disable outgoing call control service.

By default, outgoing call control service is enabled.

Example

Disable outgoing call control service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cba off
```

5.1.5 subscriber-role (LS view)

Syntax

subscriber-role *role*

undo subscriber-role { *role* | **all** }

View

LS view

Parameter

role: Name of user role, which is case-sensitive and consists of 32 characters at most.

all: Removes all user roles.

Description

Use the **subscriber-role** command to enter user role view. If the specified user role does not exist in the system, the system first creates the user role and then enters the corresponding view.

Use the **undo subscriber-role** command to remove specified or all user roles.

Example

Create user role sales and enter the corresponding view.

```
[XE-ls]subscriber-role sales
[XE-ls-ssbr-sales]
```

5.1.6 subscriber-role (outgoing call control service view)

Syntax

subscriber-role *role*

undo subscriber-role *role*

View

Outgoing call control service view

Parameter

role: Name of user role, which is case-sensitive and consists of 32 characters at most.

Description

Use the **subscriber-role** command to configure or change the user role.

Use the **undo subscriber-role** command to remove the user role.

By default, no user role is defined.

Example

Define the user role as sales.

```
[XE-ls-gw-gw01 #1 1001-cba]subscriber-role sales
```

5.1.7 subscriber-type (LS view)

Syntax

subscriber-type *subscriber-type-name*

undo subscriber-type { *subscriber-type-name* | **all** }

View

LS view

Parameter

subscriber-type-name: Name of the user number type, which is case-sensitive and consists of 32 characters at most.

all: Removes all user number types.

Description

Use the **subscriber-type** command to enter user number type view. If the specified user number type does not exist, the system first creates the user number type and then enters the corresponding view.

Use the **undo subscriber-type** command to remove specified or all user number types.

You can define up to eight user number types.

Example

Create user number type mobile and enter the corresponding view.

```
[XE-ls]subscriber-type mobile
[XE-ls-ssbt-mobile]
```

5.1.8 subscriber-type (user role view)

Syntax

subscriber-type *subscriber-type-name*

undo subscriber-type { *subscriber-type-name* | **all** }

View

User role view

Parameter

subscriber-type-name: Name of the user number type, which is case-sensitive and consists of 32 characters at most.

all: Removes all the user number types that the user role can call.

Description

Use the **subscriber-type** command to add the user number type that the user role can call.

Use the **undo subscriber-type** command to remove specified or all the user number types that the user role can call.

Example

Add the user number type mobile that the user role sales can call.

```
[XE-ls]subscriber-role sales
[XE-ls-ssbr-sales]subscriber-type mobile
```

5.1.9 type

Syntax

type *prefix*

undo type { *prefix* | **all** }

View

User number type view

Parameter

prefix: Matching regular expression, which consists of 31 characters at most.

all: Removes all regular expressions.

Description

Use the **type** command to configure the regular expression matching the user number type.

Use the **undo type** command to remove specified or all regular expression.

You can define up to 16 regular expressions.

Example

Configure user numbers with prefix 133 as type mobile.

```
[XE-ls]subscriber-type mobile
[XE-ls-ssbt-mobile]type 133
```

Chapter 6 Abbreviated Dialing Configuration Commands

6.1 Abbreviated Dialing Configuration Commands

6.1.1 adi (abbreviated dialing service view)

Syntax

adi *ab-number long-number*

undo adi { *ab-number* | **all** }

View

Abbreviated dialing service view

Parameter

ab-number: Abbreviated number, two characters in length. Each character can be a digit 0 through 9, A, B, C, D, *, or #.

long-number: Real telephone number for the abbreviated number, which consists of up to 31 characters. Each character can be a digit 0 through 9, A, B, C, D, *, or #.

Description

Use the **adi** command to create abbreviated call entries. If you specify an existing abbreviated number, the command modifies the corresponding entry.

Use the **undo adi** command to remove specified or all abbreviated call entries.

Example

Create a new abbreviated call entry, where abbreviated number 11 stands for long number 8011.

```
[XE-ls-gw-gw01 #1 1001-adi]adi 11 8011
```

6.1.2 adi (subscriber number view)

Syntax

adi

View

Subscriber number view

Parameter

None

Description

Use the **adi** command to enter abbreviated dialing service view.

Example

Enter abbreviated dialing service view.

```
[XE-ls-gw-gw01 #1 1001]adi
[XE-ls-gw-gw01 #1 1001-adi]
```

6.1.3 srv-switch adi

Syntax

srv-switch adi {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables abbreviated dialing service.

off: Disables abbreviated dialing service.

Description

Use the **srv-switch adi** command to enable or disable abbreviated dialing service.

By default, abbreviated dialing service is enabled.

Example

Enable abbreviated dialing service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch adi on
```

Chapter 7 Do-Not-Disturb Service Configuration Commands

7.1 Do-Not-Disturb Service Configuration Commands

7.1.1 dnd

Syntax

dnd

View

Subscriber number view

Parameter

None.

Description

Use the **dnd** command to enter the do-not-disturb service view.

Example

Enter the do-not-disturb service view.

```
[XE-ls-gw-gw01 #1 1001]dnd
[XE-ls-gw-gw01 #1 1001-dnd]
```

7.1.2 do-not-disturb

Syntax

do-not-disturb { open | close }

View

Do-not-disturb service view

Parameter

open: Enable the do-not-disturb service.

close: Disable the do-not-disturb service.

Description

Use the **do-not-disturb** command to enable the do-not-disturb service.

Example

Enable the do-not-disturb service.

```
[XE-ls-gw-gw01 #1 1001-dnd] do-not-disturb open
[XE-ls-gw-gw01 #1 1001-dnd]
```

7.1.3 srv-switch do-not-disturb

Syntax

srv-switch do-not-disturb {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables do-not-disturb service.

off: Disables do-not-disturb service.

Description

Use the **srv-switch do-not-disturb** command to enable or disable do-not-disturb service.

By default, do-not-disturb service is not enabled.

Example

Enable do-not-disturb service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch do-not-disturb on
```

Chapter 8 Calling Line Identification Configuration Commands

8.1 Calling Line Identification Configuration Commands

8.1.1 clir (subscriber number view)

Syntax

clir

View

Subscriber number view

Parameter

None

Description

Use the **clir** command to enter calling line identification restriction (CLIR) service view.

Example

Enter CLIR service view.

```
[XE-ls-gw-gw01 #1 1001]clir
[XE-ls-gw-gw01 #1 1001-clir]
```

8.1.2 clir (CLIR service view)

Syntax

clir { disable | enable }

View

CLIR service view

Parameter

disable: Deregisters CLIR service.

enable: Registers CLIR service. To use the service, you must enable it first.

Description

Use the **clir** command to register or deregister CLIR service.

By default, CLIR service is not registered.

Example

Register CLIR service.

```
[XE-ls-gw-gw01 #1 1001-clir]clir enable
```

8.1.3 srv-switch clip

Syntax

srv-switch clip {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables calling line identification presentation (CLIP) service.

off: Disables CLIP service.

Description

Use the **srv-switch clip** command to enable or disable CLIP service.

By default, CLIP service is enabled.

Example

Enable CLIP service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch clip on
```

8.1.4 srv-switch clir

Syntax

srv-switch clir {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CLIR service.

off: Disables CLIR service.

Description

Use the **srv-switch clir** command to enable or disable CLIR service.

By default, CLIR service is not enabled.

Example

Enable CLIR service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch clir on
```

8.1.5 srv-switch rio

Syntax

srv-switch rio {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CLIR override service.

off: Disables CLIR override service.

Description

Use the **srv-switch rio** command to enable or disable CLIR override service.

By default, CLIR override service is not enabled.

Example

Enable CLIR override service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch rio on
```

8.1.6 srv-switch tcir

Syntax

srv-switch tcir {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables temporary reservation for CLIR service.

off: Disables temporary reservation for CLIR service.

Description

Use the **srv-switch tcir** command to enable or disable temporary reservation for CLIR service.

By default, temporary reservation for CLIR service is not enabled.

Example

Enable temporary reservation for CLIR service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch tcir on
```

Chapter 9 Password Call Configuration Commands

9.1 Password Call Configuration Commands

9.1.1 pwd-call-password

Syntax

pwd-call-password *password*

undo pwd-call-password

View

Subscriber number view

Parameter

password: Password for making calls when the password call service is enabled. It consists of up to eight characters, which can be digits from 0 to 9 and letters A, B, C and D.

Description

Use the **pwd-call-password** command to set the password for making password calls.

Use the **undo pwd-call-password** command to restore the default password.

By default, the password for making password calls is 1234.

Example

Set the password for making password calls to 888888.

```
[XE-ls-gw-gw01 #1 1001]pwd-call-password 888888
```

9.1.2 srv-switch pwd-call

Syntax

srv-switch pwd-call {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables password call service.

off: Disables password call service.

Description

Use the **srv-switch pwd-call** command to enable or disable password call service.

By default, password call service is not enabled.

Example

Enable password call service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch pwd-call on
```

Chapter 10 Call Forwarding Configuration Commands

10.1 CFU Configuration Commands

10.1.1 cfu

Syntax

cfu

View

Subscriber number view

Parameter

None

Description

Use the **cfu** command to enter call forwarding unconditional (CFU) service view.

Example

Enter CFU service view.

```
[XE-ls-gw-gw01 #1 1001]cfu
[XE-ls-gw-gw01 #1 1001-cfu]
```

10.1.2 cfu-number

Syntax

cfu-number *forward-number*

undo cfu-number { *forward-number* | **all** }

View

CFU service view

Parameter

forward-number: Target CFU number, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all target CFU numbers.

Description

Use the **cfu-number** command to add target CFU numbers. Up to 2 target CFU numbers can be added.

Use the **undo cfu-number** command to remove specified or all target CFU numbers.

Example

Add target CFU number 8888.

```
[XE-ls-gw-gw01 #1 1001-cfu]cfu-number 8888
```

10.1.3 srv-switch cfu

Syntax

srv-switch cfu {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CFU service.

off: Disables CFU service.

Description

Use the **srv-switch cfu** command to enable or disable CFU service.

By default, CFU service is enabled.

Example

Enable CFU service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cfu on
```

10.2 CFNR Configuration Commands

10.2.1 cfnr

Syntax

cfnr

View

Subscriber number view

Parameter

None

Description

Use the **cfnr** command to enter call forwarding no reply (CFNR) service view.

Example

Enter CFNR service view.

```
[XE-ls-gw-gw01 #1 1001]cfnr
[XE-ls-gw-gw01 #1 1001-cfnr]
```

10.2.2 cfnr-number

Syntax

cfnr-number *forward-number*

undo cfnr-number { *forward-number* | **all** }

View

CFNR service view

Parameter

forward-number: Target CFNR number, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all target CFNR numbers.

Description

Use the **cfnr-number** command to add target CFNR numbers. Up to 2 target CFNR numbers can be added.

Use the **undo cfnr-number** command to remove specified or all target CFNR numbers.

Example

Add target CFNR number 8888.

```
[XE-ls-gw-gw01 #1 1001-cfnr]cfnr-number 8888
```

10.2.3 srv-switch cfnr

Syntax

srv-switch cfnr {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CFNR service.

off: Disables CFNR service.

Description

Use the **srv-switch cfnr** command to enable or disable CFNR service.

By default, CFNR service is enabled.

Example

Enable CFNR service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cfnr on
```

10.3 CFC Configuration Commands

10.3.1 cfc

Syntax

cfc

View

Subscriber number view

Parameter

None

Description

Use the **cfc** command to enter call forwarding based on the caller number (CFC) service view.

Example

Enter CFC service view.

```
[XE-ls-gw-gw01 #1 1001]cfc
[XE-ls-gw-gw01 #1 1001-cfc]
```

10.3.2 cf-caller

Syntax

cf-caller *caller-number forward-number*

undo cf-caller { *caller-number* | **all** }

View

CFC service number

Parameter

caller-number: Caller number, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

forward-number: Target CFC number, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all target CFC items.

Description

Use the **cf-caller** command to configure or modify CFC items. Up to 5 CFC forward numbers can be configured.

Use the **undo cf-caller** command to remove specified or all CFC items.

Example

Set to forward the calls from 1001 to 8801.

```
[XE-ls-gw-gw01 #1 1001-cfc]cf-caller 1001 8801
```

10.3.3 srv-switch cf-caller

Syntax

srv-switch cf-caller {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CFC service.

off: Disables CFC service.

Description

Use the **srv-switch cf-caller** command to enable or disable CFC service.

By default, CFC service is enabled.

Example

Enable CFC service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cf-caller on
```

10.4 CFT Configuration Commands

10.4.1 cft (subscriber number view)

Syntax

cft

View

Subscriber number view

Parameter

None

Description

Use the **cft** command to enter call forwarding based on time range (CFT) service view.

Example

Enter CFT service view.

```
[XE-ls-gw-gw01 #1 1001]cft
[XE-ls-gw-gw01 #1 1001-cft]
```

10.4.2 cft (CFT service view)

Syntax

cft *start-time stop-time forward-number*

undo cft { *start-time* | **all** }

View

CFT (call forwarding based on time range) service view

Parameter

start-time: Start time for call forwarding, in the format of HH:MM:SS.

stop-time: End time for call forwarding, in the format of HH:MM:SS.

forward-number: Target CFT number, which consists of up to 31 characters. Each character can be a digit 0 through 9, A, B, C, D, or *, #.

all: Removes all CFT items.

Description

Use the **cft** command to configure CFT items including the start time, the end time and the forwarding number. Five time ranges can be added at most. The start time must be earlier than the end time and the time range cannot cover the 00:00.

Use the **undo cft** command to remove specified or all CFT items.

Example

Set to forward calls within the time range of 07:00:00 to 23:00:00 to 8888.

```
[XE-ls-gw-gw01 #1 1001-cft]cft 07:00:00 23:00:00 8888
```

10.4.3 srv-switch cft

Syntax

srv-switch cft {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CFT service.

off: Disables CFT service.

Description

Use the **srv-switch cft** command to enable or disables CFT service.

By default, CFT service is enabled.

Example

Enables CFT service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cft on
```

10.5 CFO Configuration Commands

10.5.1 cfo

Syntax

cfo

View

Subscriber number view

Parameter

None

Description

Use the **cfo** command to enter call forwarding offline (CFO) service view.

Example

Enter CFO service view.

```
[XE-ls-gw-gw01 #1 1001]cfo
[XE-ls-gw-gw01 #1 1001-cfo]
```

10.5.2 cfo-number

Syntax

cfo-number *forward-number*

undo cfo-number { *forward-number* | **all** }

View

CFO service view

Parameter

forward-number: Target CFO number, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all target CFO numbers.

Description

Use the **cfo-number** command to add target CFO numbers. Up to 2 target CFO numbers can be added.

Use the **undo cfo-number** command to remove specified or all target CFO numbers.

Example

Add target CFO number 8899.

```
[XE-ls-gw-gw01 #1 1001-cfo]cfo-number 8899
```

10.5.3 srv-switch cfo

Syntax

srv-switch cfo {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CFO service.

off: Disables CFO service.

Description

Use the **srv-switch cfo** command to enable or disable CFO service.

By default, CFO service is enabled.

Example

Enable CFO service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cfo on
```

10.6 CFB Configuration Commands

10.6.1 cfb

Syntax

cfb

View

Subscriber number view

Parameter

None

Description

Use the **cfb** command to enter call forwarding on busy (CFB) service view.

Example

Enter CFB service view.

```
[XE-ls-gw-gw01 #1 1001]cfb
[XE-ls-gw-gw01 #1 1001-cfb]
```

10.6.2 cfb-number

Syntax

cfb-number *forward-number*

undo cfb-number { *forward-number* | **all** }

View

CFB service view

Parameter

forward-number: Target CFB number, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all target CFB numbers.

Description

Use the **cfb-number** command to add target CFB numbers. Up to 2 target CFB numbers can be added.

Use the **undo cfb-number** command to remove specified or all target CFB numbers.

Example

Add target CFB number 8899.

```
[XE-ls-gw-gw01 #1 1001-cfb]cfb-number 8889
```

10.6.3 srv-switch cfb

Syntax

srv-switch cfb {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables CFB service.

off: Disables CFB service.

Description

Use the **srv-switch cfb** command to enable or disable CFB service.

By default, CFB service is enabled.

Example

Enable CFB service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cfb on
```

Chapter 11 Third Party Call Termination Configuration Commands

11.1 Third Party Call Termination Configuration Commands

11.1.1 break

Syntax

break *call-index*

View

LS view

Parameter

call-index: LS index corresponding to the terminated call, in the range of 0 to 1599 for an XE 200 IP PBX, and in the range of 0 to 15999 for an XE 2000 IP PBX.

Description

Use the **break** command to terminate specified calls. The administrator locates the terminated calls through the LS index.

Example

Terminate calls on LS 13.

```
[XE-ls]break 13
Break the call :13
```

11.1.2 display location-server call-list

Syntax

display location-server call-list { *number* | **all** }

View

Any view

Parameter

number: Displays the call lists of a specific caller or called number, which consists of up to 31 characters. Each character can be a digit 0 through 9, A, B, C, D, *, or #.

all: Displays all call lists.

Description

Use the **display location-server call-list** command to display specified users' or all call lists.

Example

Display all call list

```
[XE-ls]display location-server call-list all
Ccb index     caller              callee                Start
13            1002                1001                  11:09:17
```

Table 11-1 Description on the fields of the **display location-server call-list** command

Field	Description
Ccb index	Call index
caller	The caller number
callee	The called number
Start	Start time of the call

Chapter 12 ONLY Service Configuration Commands

12.1 ONLY Service Configuration Commands

12.1.1 only

Syntax

only *subscriber-id*

undo only { *subscriber-id* | **all** }

View

LS view

Parameter

subscriber-id: User ID, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all only user IDs.

Description

Use the **only** command to enter the only service view corresponding to the user if you specify an existing user ID; for a nonexistent user ID, the system first create the user ID and then enters the corresponding only service view.

Use the **undo only** command to remove specified or all only user IDs.

Example

Create user 800123456 and enter the corresponding only service view.

```
[XE-ls]only 800123456
[XE-ls-only-800123456]
```

12.1.2 tel-number

Syntax

tel-number *number*

undo tel-number { *number* | **all** }

View

Only service view

Parameter

number: Number information corresponding to the user ID, which consists of up to 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all number information corresponding to the user ID.

Description

Use the **tel-number** command to add a number, user telephone number or route number, corresponding to the user ID. You can add five number information pieces for a user ID.

Use the **undo tel-number** command to specified or all number information for the user ID.

Example

Add number information 118 for the user 800123456.

```
[XE-ls-only-800123456]tel-number 118
```

Chapter 13 Time Limit Call Configuration Commands

13.1 Time Limit Call Configuration Commands

13.1.1 default-limit-call-time

Syntax

default-limit-call-time *default-limited-time*

undo default-limit-call-time

View

LS view

Parameter

default-limited-time: Sets the default time limit for calls, ranging from 60 to 65535 seconds.

Description

Use the **default-limit-call-time** command to set the default time limit for calls.

If time limit call service is enabled, no time limit is specified for gateway users under the LS, that is, the default time limit configured with this command will be used.

Use the **undo default-limit-call-time** command to restore the default value.

By default, the time limit for calls is 1800 seconds.

Example

Set the time limit for calls to 270 seconds.

```
[XE-ls]default-limit-call-time 270
```

13.1.2 limited-call-time

Syntax

limited-call-time *limited-time*

undo limited-call-time

View

Time limit call service view

Parameter

limited-time: Time limit for calls, ranging from 60 to 65535 seconds.

Description

Use the **limit-call-time** command to set time limit for calls.

Use the **undo limit-call-time** command to restore the default time limit for calls, which is defined by using the **default-limit-call-time** command in LS view.

Example

Set time limit for calls to 90 seconds.

```
[XE-ls-gw-gw01 #1 1001-ltc]limited-call-time 90
```

13.1.3 limited-time-call

Syntax

limited-time-call

View

Subscriber number view

Parameter

None

Description

Use the **limited-time-call** command to enter time limit call service view.

Example

Enter time limit call service view.

```
[XE-ls-gw-gw01 #1 1001]limited-time-call
[XE-ls-gw-gw01 #1 1001-ltc]
```

13.1.4 srv-switch limited-time-call

Syntax

srv-switch limited-time-call {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables time limit call service.

off: Disables time limit call service.

Description

Use the **srv-switch limited-time-call** command to enable or disable time limit call service.

By default, time limit call service is not enabled.

Example

Enable time limit call service.

```
[XE-ls-gw-gw01 #1 1001]srv-switch limited-time-call on
```

Chapter 14 Third Party Call Control Service

14.1 Third Party Call Control Service Configuration Commands

14.1.1 3pcc

Syntax

3pcc

View

LS-SRV view

Parameter

None

Description

Use the **3pcc** command to enter 3PCC view.

Example

Enter 3PCC view.

```
[XE-ls-srv]3pcc
[XE-ls-srv-3pcc]
```

14.1.2 display location-server 3pcc

Syntax

display location-server 3pcc { *participant-number* | **active** | **all** }

View

Any view

Parameter

participant-number: Phone numbers of participants of the third party call control task.

active: Displays information about the ongoing third party call control task.

all: Displays information about all existing third party call control tasks.

Description

Use the **display location-server 3pcc** command to display information about third party call control tasks.

Example

Display information about all existing third party call control tasks.

```
[XE-ls-srv-3pcc] display location-server 3pcc all
Index   participant                          start-time
1       8801                                 2005-12-30 12:00
        7701
2       8801                                 2005-12-23 12:00
        9901
```

Table 14-1 Description on the fields of the **display location-server 3pcc** command

Field	Description
Index	Index of the third party call control task
participant	Call participants
start-time	Time to initiate the third party call control task

14.1.3 participant

Syntax

participant *identify num1 num2 start-time*

undo participant { *identify* | **all** }

View

LS-SRV-3PCC view

Parameter

identify: Unique identifier of a third party call control task, ranging from 0 to 65535.

num1: Number of the first participant of the third party call control task. It must be a long number and contains 1 to 31 digits with the maximum length of 31 characters. It can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

num2: Number of the second participant of the third party call control task. It must be a long number and contains 1 to 31 digits with the maximum length of 31 characters. It can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

start-time: Start time of the third party call control. It is in the format of YYYY/MM/DD HH:MM:SS, HH:MM:SS or INTEGER, that is, the countdown time (in minutes) before

the start time, which is in the range 1 to 1439. Here, YYYY, MM and DD refer to the year, month and date respectively. HH, MM, and SS represent hour, minute and second respectively.

all: Deletes all existing third party call control tasks.

Description

Use the **participant** command to create a third party call control task. The start time must be later than the current system time; otherwise the configuration fails. After a third party call control task is executed, the XE IP PBX deletes this task automatically.

Use the **undo participant** command to delete the specified third party call control task or all third party call control tasks.

Example

Specify to start a third party call control task at 00:00:00 on Oct. 1, 2002. The participant numbers are 100 and 200 respectively and the task ID is 2.

```
[XE-ls-srv-3pcc]participant 2 100 200 2005/10/1 0:0:0
```

Specify to start a third party call control task at 01:02:03 on the current day. The participant numbers are 100 and 200 respectively and the task ID is 3.

```
[XE-ls-srv-3pcc]participant 3 100 200 1:2:3
```

Chapter 15 Callback-On-Busy Service

15.1 Callback-On-Busy Service Configuration Commands

15.1.1 cb

Syntax

cb

View

LS-SRV view

Parameter

None

Description

Use the **cb** command to enter callback view.

Example

Enter callback view.

```
[XE-ls-srv]cb
[XE-ls-srv-cb]
```

15.1.2 interval (LS-SRV-CB view)

Syntax

interval *time-length*

undo interval

View

LS-SRV-CB view

Parameter

time-length: Time interval of the callback–on-busy service. It ranges from 1 to 10 minutes.

Description

Use the **interval** command to set the time interval of the callback-on-busy service. This setting applies to all subscribers for whom the callback-on-busy service is enabled.

Use the **undo interval** command to restore the default interval of the callback-on-busy service.

By default, the interval of the callback-on-busy service is 1 minute.

Example

Set the interval of the callback-on-busy service to 2 minutes.

```
[XE-ls-srv-cb]interval 2
```

15.1.3 retry(LS-SRV-CB view)

Syntax

retry *times*

undo retry

View

LS-SRV-CB view

Parameter

times: Number of retry times that are performed if the callback fails. It ranges from 1 to 10 times.

Description

Use the **retry** command to set the number of retry times that are performed if the callback fails. This setting applies to all subscribers for whom the callback-on-busy service is enabled.

Use the **undo retry** command to restore the default retry times of the callback-on-busy service.

By default, the retry times of callback on busy is 10.

Example

Set the retry times of callback on busy to 3.

```
[XE-ls-srv-cb]retry 3
```

15.1.4 srv-switch cb

Syntax

srv-switch cb { **on** | **off** }

View

Subscriber number view

Parameter

on: Enables the callback-on-busy service.

off: Disables the callback-on-busy service.

Description

Use the **srv-switch cb** command to enable or disable the callback-on-busy service.

By default, the callback-on-busy service is disabled.

Example

Enable the callback-on-busy service for subscriber 1001.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cb on
```

Chapter 16 Call Pickup Service

16.1 Call Pickup Service Configuration Commands

16.1.1 srv-switch cp

Syntax

srv-switch cp {**on** | **off** }

View

LS-GW-PREFIX view

Subscriber number view

Parameter

on: Enables the call pickup service.

off: Disables the call pickup service.

Description

Use the **srv-switch cp** command to enable or disable the call pickup service.

By default, the call pickup service is disabled.

Example

Enable the call pickup service for subscriber 1001.

```
[XE-ls-gw-gw01 #1 1001]srv-switch cp on
```

Chapter 17 Call Intervention Service

17.1 Call Intervention Service Configuration Commands

17.1.1 srv-switch ci

Syntax

srv-switch ci { **on** | **off** }

View

LS-GW-PREFIX view

LS-OG-PREFIX view

Subscriber number view

Parameter

on: Enables the call intervention service.

off: Disables the call intervention service.

Description

Use the **srv-switch ci** command to enable or disable the call intervention service.

By default, the call intervention service is disabled.

Example

Enable the call intervention service for the subscriber number 1001.

```
[XE-ls-gw-ua1 #0 1001]srv-switch ci on
```

Chapter 18 Dialing Test Service

18.1 Dialing Test Operation Commands

18.1.1 dial-test

Syntax

dial-test *number-for-test*

View

LS-SRV view

Parameter

number-for-test: Subscriber number to be tested. The maximum length of the number is 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

Description

Use the **dial-test** command to check whether a subscriber number is valid through a dialing test. The debugging information shown in Table 18-1 is displayed during the test.

Table 18-1 Description of information displayed during the dialing test

Displayed information	Description
dialing	The XE is dialing the called number.
dial failed	The test fails or the called party is busy.
callee ringing!	The called phone is ringing.
test succeed!	The dialing test succeeds.
callee release, test succeed!	The called party hangs up during the test and the dialing test succeeds.

Example

Perform a dialing test on subscriber 1000.

```
[XE-ls-srv]dial-test 1000
dialing ......
callee ringing!
callee release, test succeed!
```

Chapter 19 Time Announcement Service

19.1 Time Announcement Service Configuration Commands

19.1.1 srv-switch announce

Syntax

srv-switch announce { **on** | **off** }

View

LS-GW-PREFIX view

Subscriber number view

Parameter

on: Enables the time announcement service.

off: Disables the time announcement service.

Description

Use the **srv-switch announce** command to enable or disable the time announcement service.

By default, the time announcement service is disabled.

Example

Enable the time announcement service for subscriber 1001.

```
[XE-ls-gw-gw01 #1 1001]srv-switch announce on
```

Chapter 20 MyRing Service

20.1 MyRing Service Configuration Commands

20.1.1 caller-group

Syntax

caller-group *caller-group-id*

undo caller-group {*caller-group-id* | **all** }

View

MyRing view

Parameter

caller-group-id: Caller group ID.

Description

Use the **caller-group** command to enter caller group configuration view, or create a caller group and enter its caller group view if the specified group ID does not exist.

Use the **undo caller-group** command to delete the specified caller group or all caller groups. When a caller group is deleted, all its configurations are deleted as well.

Example

Create a caller group named “friend” for subscriber 1001, and then enter its caller group view

```
[XE-ls-gw-gw01 #1 1001-myring]caller-group friend
[XE-ls-gw-gw01 #1 1001-myring-friend]
```

20.1.2 caller-member

Syntax

caller-member *long-number*

undo caller-member { *long-number* | **all** }

View

Caller group view

Parameter

long-number: Number of the caller, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Deletes all callers from the current caller group.

Description

Use the **caller-member** command to add a caller into the current caller group.

Use the **undo caller-member** command to delete the specified member or all members from the current caller group.

Example

Add a caller member 1002 into called group “friend”.

```
[XE-ls-gw-gw01 #1 1001-myring-friend]caller-member 1002
```

20.1.3 default-ring

Syntax

default-ring *media-id*

undo default-ring

View

MyRing view

Parameter

media-id: Media ID of the customized ringback tone to be played to a caller that is calling the specified called party.

Description

Use the **default-ring** command to set the media ID of the default customized ringback tone, which is played to a subscriber calling the specified called party if the caller does not belong to any caller group.

Use the **undo default-ring** command to delete the media ID corresponding to the default customized ringback tone.

Example

Set the media ID of the default customized ringback tone of subscriber 1001 to 9999, so that when a subscriber not in any caller group calls the subscriber 1001, the caller will hear the default customized ringback tone.

```
[XE-ls-gw-gw01 #1 1001-myring]default-ring 9999
```

20.1.4 myring

Syntax

myring

View

Subscriber number view

Description

Use the **myring** command to enter MyRing view.

Example

Enter MyRing view.

```
[XE-ls-gw-gw01 #1 1001]myring
[XE-ls-gw-gw01 #1 1001-myring]
```

20.1.5 ring

Syntax

ring *media-id*

undo ring

View

Caller group view

Parameter

media-id: Media ID of the customized ringback tone to be played to callers in the current caller group.

Description

Use the **ring** command to configure the media ID of the customized ringback tone to be played to the current caller group. After this configuration, when a member in this group calls the specified called party, the caller will hear the customized ringback tone corresponding to the media ID, but not the default customized ringback tone configured by the **default-ring** command.

If a caller group is not configured with a specific ringback tone, when its members dial the number of the specified called party, they will hear the default customized ringback tone configured by the **default-ring** command.

Use the **undo ring** command to restore the default ringback tone for the current caller group.

Example

Set the customized ringback tone whose media ID is 9998 for the call group named “friend”.

```
[XE-ls-gw-gw01 #1 1001-myring-friend]ring 9998
```

20.1.6 srv-switch myring

Syntax

srv-switch myring {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables the MyRing service.

off: Disables the MyRing service.

Description

Use the **srv-switch myring** command to enable or disable the MyRing service.

By default, the MyRing service is disabled.

Example

Enable the MyRing service for subscriber 1001.

```
[XE-ls-gw-gw01 #1 1001]srv-switch myring on
```

Chapter 21 CPCP Service

21.1 CPCP Service Configuration Commands

21.1.1 srv-switch cpcp

Syntax

srv-switch cpcp { **on** | **off** }

View

LS-GW-PREFIX view

Subscriber number view

Parameter

on: Enables the CPCP (call park/call pickup) service.

off: Disables the CPCP service.

Description

Use the **srv-switch cpcp** command to enable or disable the CPCP service.

By default, the CPCP service is disabled.

Example

Enable the CPCP service.

```
[XE-ls-gw-ua1 #0 1000]srv-switch cpcp on
```

Chapter 22 Automatic Operator Service

22.1 Automatic Operator Service Configuration Commands

22.1.1 auto-operator

Syntax

auto-operator *number-of-auto-operator*

undo auto-operator { *number-of-auto-operator* I **all** }

View

LS-SRV view

Parameter

number-of-auto-operator: Access code of the automatic operator service. The maximum length of the code is 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Deletes all the access codes of the automatic operator service.

Description

Use the **auto-operator** command to enter automatic operator view, or create an access code for the automatic operator service and enter the corresponding automatic operator view if the specified access code does not exist.

Use the **undo auto-operator** command to delete the specified access code or all access codes of the automatic operator service.

Example

Create the access code 6666 of the automatic operator service and enter its automatic operator view.

```
[XE-ls-srv]auto-operator 6666
[XE-ls-srv-ao-6666]
```

22.1.2 extension

Syntax

extension *corresponding-number corresponding-number-of-extension*

undo extension { *corresponding-number* | **all** }

View

LS-SRV-AO view

Parameter

corresponding-number: Operational code. The maximum length of the code is four characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #. Letter “A” may conflict with keyword **all**, thus the operational code is not allowed to be configured to be a single letter “A”.

corresponding-number-of-extension: Phone number that corresponds to the operational code. The maximum length of the phone number is 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

all: Removes all the operational code/phone number bindings.

Description

Use the **extension** command to configure the operational code/phone number bindings.

Use the **undo extension** command to delete the specified or all operational code/phone number bindings.

Example

Configure the binding between the operational code 1 and the phone number 1000.

```
[XE-ls-srv-ao-6666] extension 1 1000
```

22.1.3 prompt

Syntax

prompt *media-id*

undo prompt

View

LS-SRV-AO view

Parameter

media-id: Media ID of the access voice prompt of the automatic operator service.

Description

Use the **prompt** command to configure the access voice prompt of the automatic operator service. The prompt cannot be null.

Use the **undo prompt** command to delete the access voice prompt of the automatic operator service.

Example

Specify the media resource whose ID is 10001 as the access voice prompt of the automatic operator service.

```
[XE-ls-srv-ao-6666]prompt 10001
```

Chapter 23 Group Notification Service

23.1 Group Notification Service Configuration Commands

23.1.1 config

Syntax

config { **local** *media-id* | **remote** *caller-access-number* } *callee-access-number*

[*interval-of-callee*]

View

Notify-config view

Parameter

local: Specifies the group notification mode. Keyword **local** is for local group notification.

remote: Specifies the group notification mode. Keyword **remote** is for remote group notification.

media-id: Media ID of the media file to be played to called subscribers in the notification receiver group.

caller-access-number: Access code used by the notification deliverer. The maximum length of the access code is 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

callee-access-number: Access code used by the receiver group members. The maximum length of the access code is 31 characters, which can be digits from 0 to 9, letters A, B, C and D, and signs * and #.

interval-of-callee: Interval at which the receiver group members are recalled when a call fails, ranging from 1 to 30 minutes and defaulting to 1.

Description

Use the **config** command to configure basic parameters of a local group notification. Being in the local or remote mode, a group notification needs to be configured with the following basic parameters.

- local: Media ID of the file that the task plays, access code that receivers use to hear the notification, and interval at which the notification is sent again if the notification fails.

- remote: Access code that the deliverers use to send the notification, access code that receivers use to hear the notification, and interval at which the receiver numbers are redialed.

Example

Configure the basic parameters for local group notification named “notify1”. Set the played media file ID to 4100, receiver group access code to 111 and redial interval to two minutes.

```
[XE-ls-srv-gn-nc-notify1]config local 4100 111 2
```

Configure the basic parameters for remote group notification named “notify2”. Set the deliverer access ID to 112, receiver group access code to 111 and redial interval to two minutes.

```
[XE-ls-srv-gn-nc-notify2]config remote 112 111 2
```

23.1.2 display location-server notify-config

Syntax

display location-server notify-config { *notify-id* | **active** | **allowable** | **config** | **all** }

View

Any view

Parameter

notify-id: ID of the group notification.

active: Displays information of the current playing group notifications.

all: Displays information of all group notifications.

allowable: Displays information of group notifications that are started but not sent yet.

config: Displays information of the group notifications that are in the configuration state, that is, configured but not activated.

Description

Use the **display location-server notify-config** command to display information about the existing group notifications.

Example

Display information of group notification named “gn01”.

```
[XE-ls-srv-gn-gc-gc01]display location-server notify-config gn01
Notify-config:  gn01
State        :  config
Mode         :  local
```

```
MediaID      :  1010
Callee-access:  777
Start-time
Call-interval:  2       (min)
Duration     :  30      (min)
range of notify:
        curgroup
```

Table 23-1 Description on the fields of the **display location-server notify-config** command

Field	Description
Notify-config	Group notification name
State	group notification status
Mode	Group notification mode
Media ID	Media ID of the media file used for local group notification
Callee-access	Access code that receivers use to hear the notification
Start-time	Time that the notification is sent
Duration	Group notification duration
Range of notify	Group that receives the notification

23.1.3 display location-server notify-group

Syntax

display location-server notify-group { *notify-group-id* | **all** }

View

Any view

Parameter

caller-group-id: ID of the notification group to be displayed.

all: Displays all groups.

Description

Use the **display location-server notify-group** command to display information about one specified notification group or all notification groups.

Example

Display information of the notification group named “notifyGroup”.

```
<XE>display location-server notify-group notifyGroup
notifyGroup
  8801
  8802
  8803
```

The result shows notifyGroup has three members, namely, 8801, 8802 and 8803.

23.1.4 format

Syntax

format *format*

undo format

View

Notify-config view

Parameter

format: Format of the media file used for the group notification. The value range is { G711a | G711u | G7231 | G729 }.

Description

Use the **format** command to specify format of the media file used for the group notification.

Use the **undo format** command to restore the format of the media file used for the group notification to the default.

By default, G711u is adopted.

Example

Specify that the group notification notify1 uses a file of the G711a format.

```
[XE-ls-srv-gn-nc-notify1]format G711a
```

23.1.5 group-notify (LS-SRV view)

Syntax

group-notify

View

LS-SRV view

Parameter

None

Description

Use the **group-notify** command to enter group-notify view.

Example

Enter group-notify view.

```
[XE-ls-srv]group-notify
[XE-ls-srv-gn]
```

23.1.6 group-config (group-notify view)

Syntax

group-config *group-id*

undo group-config { *group-id* | **all** }

View

Group-notify view

Parameter

group-id: ID of the notification group to be created/configured.

all: Deletes all notification groups.

Description

Use the **group-config** command to enter group-config view, or create the notification group and enter its group-config view if the specified ID does not exist.

Use the **undo group-config** command to delete the specified notification group or all notification groups. When a notification group is configured, it configuration is deleted as well.

Example

Create a notification group named “group1” and enter its notification group configuration view.

```
[XE-ls-srv-gn]group-config group1
[XE-ls-srv-gn-gc-group1]
```

23.1.7 join

Syntax

join *group-id*

undo join { *group-id* | **all** }

View

Notify-config view

Parameter

group-id: ID of the notification receiver group.

all: Deletes all groups that receive the current notification.

Description

Use the **join** command to specify a group as a notification receiver group, so that all members in it can receive the group notification.

Use the **undo join** command to disable all members of the specified group or of all groups from receiving the group notification.

Example

Enable all members of the group named “group1” to receive the group notification “notify1”.

```
[XE-ls-srv-gn-nc-notify1]join group1
```

23.1.8 member

Syntax

member *number*

undo member { *number* | **all** }

View

Group-config view

Parameter

number: Number of the subscriber to be added to the current group.

all: Deletes all subscribers in the current notification group.

Description

Use the **member** command to add a subscriber to the current group. A subscriber belongs to only one group.

Use the **undo member** command to delete the specified subscriber or all subscribers from the current group.

Example

Add subscriber number 1001 to group group1.

```
[XE-ls-srv-gn-gc-group1]member 1001
```

23.1.9 notify-config

Syntax

notify-config *notify-id*

undo notify-config { *notify-id* | **all** }

View

Group-notify view

Parameter

notify-id: ID of the group notification.

all: Deletes all group notifications.

Description

Use the **notify-config** command to enter group-notify view, or create a group notification and enter its group-notify view if the specified ID does not exist.

Example

Create a group notification named “notify1” and enter its group-notify view.

```
[XE-ls-srv-gn]notify-config notify1
[XE-ls-srv-gn-nc-notify1]
```

23.1.10 shutdown

Syntax

shutdown *notify-id*

View

Group-notify view

Parameter

notify-id: ID of the group notification to be cancelled.

Description

Use the **shutdown** command to cancel a started group notification.

Note:

A group notification cannot be canceled rightly after it is enabled. Specifically, the **shutdown** command can be executed at least five minutes after thee **start** command is executed.

Example

Cancel the group notification named “notify1”.

```
[XE-ls-srv-gn]shutdown notify1
```

23.1.11 start

Syntax

start *notify-id* [*notify-time*] [*duration-of-notify*]

View

Group-notify view

Parameter

notify-id: ID of the group notification to be started.

notify-time: Time to start sending the group notification. It is in the format of YYYY/MM/DD HH:MM:SS or HH:MM:SS. YYYY/MM/DD: Date when the local group notification is to be sent. If YYYY/MM/DD is not provided, it defaults to the current day. HH:MM:SS: Time when the group notification is to be sent. If *HH:MM:SS* is not provided, the group notification will be sent immediately.

duration-of-notify: Duration of the local group notification, that is, the time between the starting and ending points of the notification. It ranges from 1 to 120 minutes, defaulting to 30.

Note:

Only when configuring local group notification, not remote group notification, can you use *notify-time* and *duration-of-notify* parameters.

Description

Use the **start** command to activate the specified group notification and set related information, including the notification sending time and notification duration.

You can set the notification sending time in the form of:

- HH:MM:SS: The group notification is sent at the specified time on the current day.
- YYYY/MM/DD HH:MM:SS: The group notification is sent at the specified time on the specified day.

If you do not specify the time, the group notification will be sent immediately after this command is executed.

Example

Configure to send the group notification named “notify1” immediately.

```
[XE-ls-srv-gn]start notify1
```

Configure to send group notification named “notify2” at 03:04:05 on January 2, 2005. The notification lasts five minutes.

```
[XE-ls-srv-gn]start notify2 2005/01/02 03:04:05 5
```

Configure to send group notification named “notify3” at 20:00:00 on the current day. The notification lasts three minutes.

```
[XE-ls-srv-gn]start notify3 20:00:00 3
```

Chapter 24 Call Transfer Service

24.1 Call Transfer Service Configuration Commands

24.1.1 srv-switch ct

Syntax

srv-switch ct {**on** | **off** }

View

LS-GW-PREFIX view

LS-OG-PREFIX view

Subscriber number view

Parameter

on: Enables the call transfer service.

off: Disables the call transfer service.

Description

Use the **srv-switch ct** command to enable or disable the call transfer service.

By default, the call transfer service is disabled.

Example

Enable the call transfer service for subscriber 1001.

```
[XE-ls-gw-gw01 #1 1001]srv-switch ct on
```

Chapter 25 Number Query Service

25.1 Number Query Service Configuration Commands

25.1.1 srv-switch query-self

Syntax

srv-switch query-self { **on** | **off** }

View

LS-GW-PREFIX view

Subscriber number view

Parameter

on: Enables the number query service.

off: Disables the number query service.

Description

Use the **srv-switch query-self** command to enable or disable the number query service.

By default, the number query service is disabled.

Example

Enable the number query service for subscriber 1001.

```
[XE-ls-gw-gw01 #0 1001]srv-switch query-self on
```

Chapter 26 Alarm Clock Service

26.1 Alarm Clock Service Configuration Commands

26.1.1 alarm (subscriber number view)

Syntax

alarm

View

Subscriber number view

Parameter

None

Description

Use the **alarm** command to enter alarm clock view.

Example

Enter alarm clock view.

```
[XE-ls-gw-gw01 #1 8801]alarm
[XE-ls-gw-gw01 #1 8801-alarm]
```

26.1.2 alarm (alarm clock view)

Syntax

alarm { { *date time* } | { *time* { **once** | **cycle** } } }

undo alarm

View

Alarm clock view

Parameter

date: Date to execute the alarm clock task, in the format of YYYY/MM/DD.

time: Time to execute the alarm clock task, in the format of HH:MM, where HH is optional.

once: Specifies the type of the alarm as “once”, that is, the alarm is executed only once at the specified time.

cycle: Specifies that the alarm clock goes off at the set time every day.

Description

Use the **alarm** command to set an alarm clock task, which can be any of the two types:

- One-off alarm clock: This alarm clock rings on the specified date and time. The related command syntax is **alarm** *date time*. If no specified date is configured, this type of alarm clock task goes off only once, at the specified time on the current day. The related command syntax is **alarm** *time* **once**. Note that the specified alarm time must be later than the current time.
- Cyclic alarm clock: This type of alarm goes off at the specified time every day. The related command line is **alarm** *time* **cycle**.

Use the **undo alarm** command to delete the existing alarm clock settings.

Example

Set a one-off alarm clock task that goes off at December 30, 2005 12:00, for the subscriber 1001.

```
[XE-ls-gw-gw01 #1 1001-alarm]alarm 2005/12/30 12:00
```

Set a cyclic alarm clock task that goes off at 12:00 every day, for the subscriber 1002.

```
[XE-ls-gw-gw01 #1 1002-alarm]alarm 12:00 cycle
```

Set a one-off alarm clock task that goes off at 14:00 in the current day, for the subscriber 1003.

```
[XE-ls-gw-gw01 #1 1003-alarm]alarm 14:00 once
```

26.1.3 srv-switch alarm

Syntax

srv-switch alarm {**on** | **off** }

View

Subscriber number view

Parameter

on: Enables the alarm clock service.

off: Disables the alarm clock service.

Description

Use the **srv-switch alarm** command to enable or disable the alarm clock service.

By default, the alarm clock service is disabled.

Example

Enable the alarm clock service for subscriber 1001.

```
[XE-ls-gw-gw01 #1 1001]srv-switch alarm on
```

Appendix

Appendix A Command Index

The command index includes all the commands in the *VRP Command Manual*, which are arranged alphabetically.

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